PROOF THAT THE BIBLE IS NOT ABOUT GOD: THE SCIENCE OF MYTH PART TWO

The following solutions to myths from different cultures & eras, all resulted from their reexamination in a lunar light. These examples not only show but prove that the ancient Egyptian & Hellenic deities weren't conceived as divinities, but rather identified distinct phases of the lunar cycle. When the myths involving them are read with an understanding of lunar measure, their meaning becomes clear. Taken literally, ethically, theologically, psychologically or sociologically, the myths remain diffuse & conjectural.

The Patriarchs in the Bible, likewise inhabited a firmament of calendar ideals, the biblical calendar 'they' introduced, representing an empirical advancement over earlier computational measures of time (their 'variable-month calendar' representing an historic improvement over the 'fixed-month calendars' of Egypt & Babylon). The biblical episodes deciphered here – among others in my books – not only illustrate their consistency with older lunar myths (sustaining a continuous tradition), but also show that the Bible's main men likewise inhabited lunar roles: Noah, Moses, Abram, David & Jesus.

Here's a list of the myths deciphered below. See also Part One: *Œdipus & the Science of Myth* for a survey of historical interpretations of myth. *Nick Drumbolis*

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A | EGYPTIAN MYTHS

EGYPTIAN MYTH 1: The Phœnix

In 1995 I made a discovery that provided a consistent solution to puzzles in ancient myths & scripture. To illustrate how this discovery unlocks the meaning of myth, here's an example of a well known myth that remained unsolved before the discovery.

"They [*the Egyptians*] *have also another sacred bird called the Phœnix, which I myself have never seen, except in pictures. Indeed it is a great rarity, even in Egypt only coming there (according to the accounts of the people of Heliopolis) once in 500 years, when the old Phœnix dies* [Herodotus, *Histories* Book 2: 73, translated by George Rawlinson, 1858: John Murray]."

The myth of the Phœnix rising every 500 years involves the difference between a 25-year Egyptian calendar cycle (amounting to 9125 days), & the number of lunations in that period (309). Also known as the actual lunar month, the lunation extends 29.530588 days (with 309 lunations totalling 9124.9516 days). Thus it can be seen that the interval of 25 Egyptian years (each 365 days) exceeds 309 lunations by 0.0484 day (*ie,* 1 hour 9 minutes 42 seconds).

The 25-year calendar cycle was a sacred (*ie,* secret) cycle maintained by the Egyptian priests as a check on actual time-measure, because it came so close to convergence with an integral number of lunations (309).

In accordance with this, the priests venerated & cared for a white bull known as the Apis bull, which they killed & stuffed at the end of its 25-year 'reign'. Stuffed Apis bulls were preserved in the Serapeum at Saqqara as a palpable measure of elapsed time (the cache of mummified bulls in the catacombs preserving a cumulative record of earlier Apis cycles, affording an accurate timetable of history).

Every 500 years, the extra 0.0484-day portion of their 25-year cycle (which exceeds those 309 lunations), accumulates close to an entire day, putting 'the calendar year' a day ahead of the lunar cycle; thus requiring the subtraction of a day from their calendar every 500 years, to bring the sun back into 'alignment with the moon'. This explains the *burning* of the Phœnix (burn off that extra day) so that a new 500-year cycle can rise again from the ash.

As becomes evident, ancient calendars were calibrated to lunar cycle – the previously unrecognized key to interpreting myth – *not the sun,* with which the Phœnix & so many other mythical figures have long been expressly associated.

And to preserve this data over the lengthy interval of 25 generations (25 × 20 = 500 years) required a mnemonic tale or myth that would resonate with descendants responsible for adjusting future calendars, to maintain attendance to this semi-millennial adjustment.

EGYPTIAN MYTH 2: Set's Destruction of the Eye of Horus

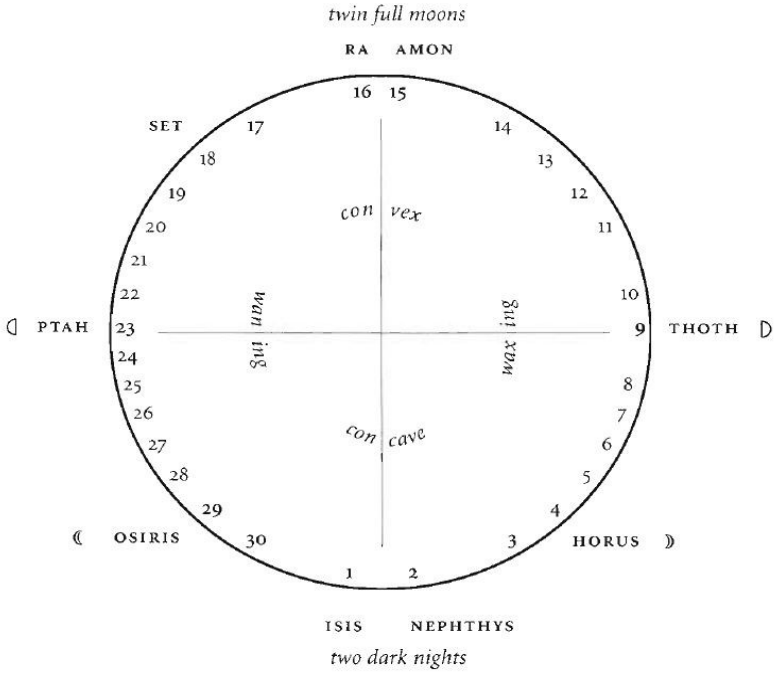


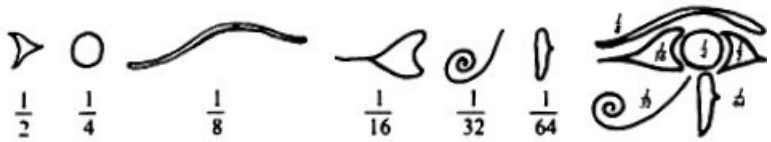
FIG II COMPASS OF THE EGYPTIAN THIRTY-DAY LUNATION

The ancient Egyptian god Horus was not in fact the sun-god history contends, but rather a lunar theophany of the waxing crescent (as shown above in the schematized lunation*). The other gods of the Egyptian pantheon, in turn, represented the successive focal lunar phases. Myths of the various conflicts between Horus & Set involved destruction of the Eye of Horus (*wadjet*). In one myth Set tore the eye into six pieces which he scattered to the wind. The Ennead, or Council of Deities, directed Thoth to recover the parts & restore the eye.

* Note that the diagram above was produced before I realized that Isis was implicitly a double goddess, the myth of the virginal birth of Horus belatedly making it clear to me that the positions of Isis & Nephthys on the lunar compass should be reversed.

Horus represents waxing crescent (emerging on the third day of the lunation) & Thoth embodies waxing half-moon (occurring on the ninth day in the cycle) – consecutive 'focal phases' of the rising arc of the lunation, separated by six nights. The *eye* of Horus, in this respect, reflects the first *visible* phase of the new lunation (on the third night) – the first two nights of the cycle remaining dark without any moon in the sky – while the six pieces of the eye represent the six spectres of the concave quarter of the rising arc (days 3–8) which fuse to form the half-moon (on the ninth day), completing the reign of the concave spectres. The throne of heaven is then relinquished to the convex spectres of the gibbous quarter of the waxing arc.

The six portions of the figurative eye were subsequently adapted as measures by Egyptian priests who were also mathematicians – each part designating a signal fraction employed in the measure of volume (known as the Hekat fractions).



The portion of the cornea nearest the nose represented the fraction 1/2, & was associated with the sense of smell. The pupil signifying 1/4 represented sight. The eyebrow representing 1/8, was inclined to thought. The outer portion of the cornea comprising 1/16, points to the sense of hearing. The falcon flange beneath the eye (toward the ear) which designated 1/32, directs attention to the sense of taste. While the figurative leg depending from the eye (toward the nose) comprised the fraction 1/64, partial to the sense of touch – as in 'touching down'.

Addition of the Hekat fractions, however, presented an inexplicable discrepancy: restoration of the Eye of Horus from the recovery of all its parts, leaves 1/64 unaccounted for [1/2 + 1/4 + 1/8 + 1/16 + 1/32 + 1/64 = 63/64]. In the myth, the missing portion was ultimately supplied by Thoth, 'god of just measure'.

There's something more to this equation, it turns out, than meets the eye of scholarly consensus. When applied to the length of the Egyptian month (30 days) the sum of the assembled fractions relinquishes the length of the mean lunation, to within a minute [63/64 X 30 = 29.53925]. The length of the lunation is currently calculated at 29.530588 days; the difference between the modern & the putative Egyptian measures, amounting to 57.1968 seconds.

Somehow, the Egyptians managed to recognize that the difference between the calendrical expedient of their 30-day month, & the actual length of the mean lunation, comprised a 64th of the month! The ancient Egyptians however have not generally been credited by contemporary scholars & historians with this degree of mathematical sophistication.

The Eye of Horus, in other words, embodied two distinct lunar measures; the Egyptian month of 30 days (discrete); & the mean lunation (anatomized), which the Egyptians apparently calculated to extend 29 days 12 hours 45 minutes (our contemporary calculation: 29 days 12 hours 44 minutes 3 seconds).

The leg symbol for the fraction 1/64, moreover, denoted 'rest' & 'healing. 'Rest', it now becomes clear, because the terminal fraction of the lunar equation required doubling – or 'resting at that point in the equation' (equivalent to 'counting it again') in order to complete the month & 'heal' the shattered Eye of Horus fully.

It bears further notice that the terminal phase of the schematized lunation – waning crescent, represented by the Egyptian god Osiris – embodied a duplex count when two successive lunations were configured alternately as male (29-day) & female (30-day) months: the terminal phase counting as day 29 in the first & day 30 in the second. Conjoined male & female months lasting 59 days better accord with the length of two lunations (59.061176 days).

The waning crescent of the 30-day month, therefore, was to be equated with the missing 64th in the Hekat equation, supplied by Thoth – a categorically underworld completion, as it embodied an interval which could not claim to reside in the lunation, the actual source of time (because 63/64 of the 30-day month exhausted the lunation). An echo from the catacombs of the underworld goddess, Hecate.

Apart from providing an unprecedented Natural solution to this core Egyptian myth, it substantiates the contention that the ancient Egyptians identified Horus & Thoth with the first two of seven focal phases of the visible lunation. The only phases readily identifiable visually, the seven focal phases include: waxing crescent (3), waxing half-moon (9), first full moon (15), second full moon (16), first waning phase (17), waning half-moon (23) & waning crescent (29/30). The seven deities personifying these phases are Horus (waxing crescent), Thoth (waxing half-moon), Amon (first full moon), Ra (second full moon), Set (first waning phase), Ptah (waning half-moon) & Osiris (waning crescent). The other 20/1 visible lunar phases are hard to conclusively identify with their exact day in the cycle, through observation alone. The two dark nights between the old & new lunations, were governed by the underworld goddesses, Nephthys (1) & Isis (2).

FOCAL EGYPTIAN & HELLENIC PANTHEONS

[1]	Nephthys	first dark night	Artemis
[2]	Isis	second dark night	Demeter
(3)	Horus	waxing crescent	Ares
(9)	Thoth	waxing half-moon	Hermes
(15)	Amon	first full-moon	Apollo
(16)	Ra	second full-moon	Zeus
(17)	Set	first waning phase	Poseidon
(23)	Ptah	waning half-moon	Hephæstus
(30)	Osiris	waning crescent	Hades / Pluto (29/30)

EGYPTIAN MYTH 3: Set's Murder of Osiris

Embodying the first waning phase on the 17th night of the lunar cycle, Set (Lord of the Waning Cycle) murders his brother Osiris, who embodies the final phase in the waning arc of the cycle (reigning over nights 29 or 30). In one version of this myth, Set cuts the body of Osiris into 14 pieces – equal to the number of days in the waning arc (nights 17 through 30). Set's initiation of the waning arc of the cycle is indirectly responsible for the death of all waning phases (by introducing a dying arc), culminating in the inevitable demise of the final phase (Osiris) – accounting for the myth of his murder.

In another version of the myth the two focal underworld goddesses, Isis & Nephthys, recover the scattered pieces of his body – except for the penis which was eaten by a fish in the Nile (the fecundity of the river thereby attributed to the penis of Osiris consumed by Oxyrhynchus). This acknowledges the fact that the final night of the lunar cycle straddles two days, 29 & 30 (the length of a lunation being 29.530588 days). Variable-month calendars dealt with this complication by staggering 29-day male months with 30-day-female months (the male month missing its penis, the female month adding a rib – as in the story of Adam & Eve). This is also the significance of Set killing his brother Osiris twice – once for the 29-day & again for the 30-day month.

The visible phases were considered male because the crescent resembles a penis, capable of rising. Osiris, in his capacity as 'father of the new lunation', descends into the underworld on the first of two dark nights, where he impregnats Nephthys, the wife of Set. In some versions of the myth, the reason for Set's anger is attributed to this betrayal by his brother.

However as brothers of the waning arc, Set merely embodied the 'fullest' waning phase, while Osiris was the 'leanest'. Thus it may be seen that in the progression of the waning arc, Osiris is essentially Set at his leanest or oldest (or conversely, Set can be seen as Osiris in youth, at his fullest). In this respect,

Nephthys, wife of Set, could hardly be considered adulterous in receiving Osiris (the older version of Set) as her mate.

The death of Osiris is ultimately avenged by his 'son' Horus 'bringer of light' (in that waxing crescent initiates the revived lunation) – another phallic figure embodying a mirror-image of the waning crescent of his 'father' Osiris, though now brandished as an avenging blade on high – their conflict leading to Set's destruction of the Eye of Horus during the most notorious skirmish.

But a key aspect of the lunar modeling in this myth is that the child that Osiris actually begets with Nephthys on that first dark night, is Anubis (his shadow son), while Horus (his avenging son) is magically produced by her twin Isis on the second dark night, without his involvement – a paradigmatically virginal birth – her role as 'double' goddess accentuated in the doubled syllable of her name. The lunar myth of virginal birth was necessitated by the two dark nights violated by a solitary shaft of light; the final visible phase (Osiris) having been inconveniently extinguished after he impregnated Nephthys. The light of every lunar phase – which, on its descent into the realm of the goddesses, fathered the phase of the succeeding night – is categorically extinguished by the waters of the underworld. Leaving only a single visible phase without a father (Horus). Virgin birth in the gospels of Luke & Matthew, remarkably prefigured in a lunar myth – Christ enigmatically emulating Horus.

B | BIBLICAL MYTHS: OLD TESTAMENT

OLD TESTAMENT MYTH 1: The Flood

The myth of an ancient global deluge is one of our most ingrained legacies from the past. Innumerable cultures preserve versions of this myth – the oldest extant texts deriving from Mesopotamia, in the Eridu *Genesis* & Sumerian *Gilgamesh* narratives. The Biblical account of a flood can be readily traced back to these earlier texts.

The account of the Flood in the Bible, however, contains a number of glaring inconsistencies. Most scholars agree that the likeliest explanation for such divergence is that the account as it now stands, preserves two distinct records:

"Exegetical criticism has conclusively demonstrated – and this is admitted by all the experts without exception, Roman Catholic, Protestant and agnostic – that the narrative of Genesis 6–8 is in reality the fusion of two accounts, closely interwoven, one of which (J = Jahvistic) dates from the eighth century BC, the other (P = Priestly) dating at the earliest from the sixth century BC [Parrot, *The Flood & Noah's Ark,* p15]."

What is not widely appreciated is that the main reason for arriving at this conclusion is that the numbers in successive verses of the same chapter of Genesis, don't match; that is, the problematic discrepancies prove to be mathematical.

Numerical inconsistencies are common throughout the Bible; but where a lack of supporting details precludes the 'divergent-source' hypothesis, such incongruities are simply dismissed by the experts as the result of 'approximation' – in place of a more rigorous 'numeracy'. As I show in the section on King David (below), his discrepant reigns are readily resolved in a lunar light.

Is it possible that the mathematical discrepancies in the account of the Flood might also benefit from a calendrical comparison? This hypothesis entertains the prospect that the disparate sums in chapters 6 through 8 in the book of Genesis were meant to be interpreted as complementary aspects of a new 'anointed' calendar measure.

The first glaring discrepancy involves the animals Noah is instructed to take aboard the ark: *"Of all the clean animals you must take seven of each kind, both male and female; of the unclean animals you must take two, a male and its female (and of the birds of heaven also, seven of each kind, both male and female), to propagate their kind over the whole earth* [Genesis 7: 2/3]."

A few lines later the narrative appears contradictory: *"(Of the clean animals and the animals that are not clean, of the birds and all that crawls on the ground, two of each kind boarded the ark with Noah, a male and a female, according to the order God gave Noah.)"* [Genesis 7: 8/9]

First impressions may lead reflexively to the conclusion that these are likely different accounts of the same event; but is it not conceivable that the disparity might arise from separate measures of the same thing (*eg,* 5 fingers, 1 hand)?

Entertaining the hypothesis that both accounts refer to the lunar cycle, it may be seen that the initial sum tidily accords with the seven focal phases in the lunation: waxing crescent; waxing half-moon; twin full moons; first waning phase; waning half-moon; & waning crescent. These are the only spectres or phases in a lunation which are readily identifiable on observation. Phases between these spectres cannot be conclusively identified on sight; the observer able only to recognize them as spectres which fall somewhere in the lunation sequence between two 'clean' phases.

The 'unclean' phases between the 'clean' ones are each accorded a night & a day – or male & female issues* – because the moon was perceived as a distinct male spectre which descended into the underworld lair of the goddess during 'his' daytime, to propagate the successive phase for the following nighttime; each male spectre coupling with a different aspect of the lunar goddess. Which holds true for both 'clean' & 'unclean' phases – explaining the apparent conflict between the 'divergent' accounts. As suspected, the model of the generic lunation suggests that these apparently contradictory allusions may in fact prove to be supplementary.

*The visible phases were considered male because the lunation begins & ends with a phallic sliver (waxing & waning crescents); while the two nights without a visible spectre in the sky were denoted female because the moon was believed to have been confined to the underworld realm of the earth-mother goddess during the dark interval.

The birds aboard, for example, lay the emphasis on 'something that flies' in the model alluded to – directing attention to the sky. After the flood, Noah sends a raven* out (the bird of night, emblem of the underworld) followed by a dove (white like the moon). But the dove is forced to return to the ark twice before finding a perch – the third night of the successive lunation bearing the first sign (a sliver) of the new moon on high [Genesis 8: 6–12].

* The symbol of the raven alerts the reader to the possibility that the passage has something to do with night; the recurrent attempts of the dove, that it deals with something white which takes three tries to secure a perch; while birds naturally implicate the sky.

The Flood, in other words, here accords with a recurrent phenomenon: the submergence of the moon in the waters of the underworld, for three days & two nights following the decline of waning crescent at the end of each lunation. Which would explain the 'immortality' of Ut-Napishtim*: he must conduct the 'seed' (or spark) of renewed life (or light) through the extinguishing depths of the underworld, to restore the moon to its place in the sky following the 'deluge' which consumes every lunation – for all eternity. A long tradition of employing animals to represent lunar phases, as I have shown,† stretches back beyond the period of the Palæolithic cave murals – the horns of the ungulates drawing a natural association in primitive iconography, with the lunar crescents. In a symbolic light, Noah may be understood merely to

transport the identifying totem for each lunar phase, through the underworld seas during the 'three-day & two-night dark interval' between waning & waxing crescents, to their resurrection in the subsequent lunation.

* Ut-Napishtim (the ancestor of Gilgamesh) who "alone among all men" gained eternal life, was the Sumerian Noah. [Parrot, *The Flood & Noah's Ark,* p25].
† see 'PREHISTORIC MYTH 4D: ÇATAL HÖYÜK' below: Ancient Lunar Iconography.

The second discrepancy in the Biblical version of the Flood concerns its end: *"It was in the six hundred and first year of Noah's life, in the first month and on the first of the month, that the water dried up from the earth. Noah lifted back the hatch of the ark and looked out. The surface of the ground was dry!* [Genesis 8: 13]."

Yet in the very next line the text asserts: *"In the second month and on the twenty-seventh day of the month the earth was dry* [Genesis 8: 14]."

Might the model of lunar measure likewise render these divergent accounts complementary?

When *"he became the father of Shem, Ham and Japheth"* Noah was 500 years old [Genesis 5: 32]. *"In the six hundredth year of Noah's life, in the second month, and on the seventeenth day of that month"* the Flood began [Genesis 7: 11] – ie, 99 years later (prefiguring a 99-interval measure).

And on the first day of the first month of his six-hundred-&-first year, all the water was gone.

The Flood – which ended on day 219,001 of Noah's life* & began on day 218,682† – can thus be computed to have lasted 319 days.‡

* 600 years × 365 days per year = 219,000 days + 1 day (the first day of the first month of the 601st year) = 219,001 days.
† 599 years × 365 days per year = 218.635 days + 30 days (the first month) + 17 days (of the second month) = 218,682 days.
‡ 219,001 – 218,682 = 319 [11 × 29].

And the number '319' conceals a telltale calendrical innovation, in the product of eleven of the new 29-day months employed – following the Flood – in the variable-month calendars of the Greeks & Israelites [*Myth as Math,* pp17ff].

This radical innovation drew the measure of the 'month' far nearer to that of the mean 'lunation' (29.530588 days) by alternating 29-day male & 30-day female months in a great-year calendar extending eight years.* The Egyptian & Babylonian calendars which it replaced needed constant adjustment to bring them back into alignment with the solar cycle, because of their rigid adherance to the 30-day month.†

* Two lunations (2 × 29.530588 = 59.061176) exceeding two alternating months (29 + 30 = 59) by 88 minutes (0.061176 × 1440 = 88.09344).
† Twelve 30-day months in the generic year (360 days) which had to be completed with the addition of 5 intercalary days per year (Egyptian) or an extra month every six years (Babylonian).

The variable-month 8-year cycle comprised 99 months: 49 male 29-day months (1421 days) plus 50 female 30-day months (1500 days) extending 2921 days. Eight solar years consume 2922 days.* Thus a solitary extra intercalary day was added every 8 years to adjust the cycle to the seasons.

* 8 × 365.2422 = 2921.9376 (2922 with the year computed at 365.25 days).

But an earlier 8-year calendar – the flawed 100-month variant – had been conceived with eight 364-day years comprising eleven 29-day months plus one-&-a-half 30-day months, requiring the addition of an extra ten intercalary days every cycle.*

* [11 × 29] 319 + 45 [11/2 × 30] = 364; 8 × 364 = 2912; 2912 + 10 = 2922.

Both these innovations were an improvement over the earlier calendar which required an extra 5 days per year (as well as further complex adjustments every 25, 70, 350 & 500 years).* The 100-month 8-year cycle, however, proved problematic after 128 years,† prompting the revision of the 'anointed' 99-month version.

* *Instructions for Restoring the Ancient Wisdom,* pp48/9.
† Extended application of the 100-month 8-year measure exhausted its usefulness in synchronizing lunar & solar cycles after 128 years, because each 8-year cycle exceeded the interval of 8 solar years by 0.0625 days or 90 minutes (2922 – 2921.9376). Meaning that after 16 of the 100-month 8-year cycles, the great-year measure would be an entire day ahead of the sun, which would require subtraction to rectify. But intercalation of calendrical measures is confined to adding days to bring a lagging calendar back into step with the celestial cycles (10 days each 100-month cycle). The 99-month variant of the 8-year great-year measure rectified the defect by falling short of 8 solar years 0.9376 days every cycle (without the intercalated day). Meaning that the single day which was intercalated after each of the first fifteen 8-year cycles could be withheld after the sixteenth 8-year cycle to bring the calendar & solar cycles back into step, once an entire day difference had been accumulated [*Instructions for Restoring the Ancient Wisdom,* p50].

The duration of the Flood – 319 days – therefore, alerts us to the possibility that the introduction of the variable-month calendar occasioned a disruption which allowed the old corrupt order to be replaced.* But only after the waters had disappeared (with the passing of the flawed 100-month version of the 8-year calendar) were conditions restored to God's liking. The perfected 99-month 8-year calendar was anointed the Chosen Measure.

* *"The earth grew corrupt in God's sight, and filled with violence…of man's making"* [Genesis 6: 11, 13]; *"He rid the earth of them, so that only Noah was left, and those with him in the ark"* [Genesis 7: 23]; the corrupt calendar ('time' as construed by mortals) had long violated Nature (*ie,* 'time' orchestrated by God) in continually falling out of step with the visible seasons ("God's sight").

Thus, in a calendrical light, the Biblical narrative of the Flood demonstrably accords both with the nature of the heavenly lunation & man's attempts to perfect an earthly calendar with which to keep track of it. Noah had lived 600 years when the Flood came to an end. Computed in whole years, he had lived 219,000 days.* But the year actually exceeds 365 days; the new 8-year calendar reckoned in years of 365.25 days. His age in reality comprising 219,150 days: a difference of 150 days.†

* 600 years × 365 whole days per year = 219,000 days.
† 600 years × 365.25 rounded days per year = 219,150 days.

The Flood began on the 17th day of the second month [Genesis 7: 11] after Noah's 599th birthday; while the ark came to rest atop Mount Ararat on the 17th day of the seventh month [Genesis 8: 4] – an interval of five months × 30 days = 150 days.

"The waters rose on the earth for 150 days [Genesis 7: 24]."

In other words, the 150-day disparity in Noah's age over a period of 600 years, when calculated with the approximate (Egyptian 365-day) & more accurate (Israælite 365.25-day) year-lengths, accords with the rise of the flood-waters over the earth. That is, 'the revised measure of 600 years' rose by 150 days with the improved year of the 'anointed' measure: the rising tide in actuality 'a swelling of time'.

The Biblical account of the Flood likewise preserves a computation of the 'swell' in the actual lunation, above the expedient measure of the 29.5-day month.* The difference between the length of the mean lunation (29.530588 days) & the generic month (29.5 days) is 0.030588 days. Over a period of 600 rounded years (219,000 days) there would be 7423.7288 generic months.† Multiplying this figure by the 'swell' of a lunation gives a product of 227.07701 days.‡

* 29 + 30 = 59; 59 ÷ 2 = 29.5.
† 219,000 days ÷ 29.5 days per generic month = 7423.7288 generic months.
‡ 7423.7288 months × 0.030588 days = 227.07701 days; 0.07701 days × 1440 minutes – 110.8944 minutes or 1 hour 50 minutes 54 seconds.

The Biblical allusion to this product is secreted in the enigmatic second date for the end of the Flood: *"In the second month and on the twenty-seventh day of the month the earth was dry* [Genesis 8: 14]."

Cryptic though it may be, the numbers 2 & 27 accord remarkably with the number of days lost over a period of 600 rounded years, employing the generic month instead of the actual lunation: 227.

Although one's first inclination might be to dismiss the similarity as a coincidence, the fact that three earlier figures in the Flood narrative also accord with calendar measures (not to mention the calendrical nature of a conflict in dates for the end of the Flood; or the demonstrable resolution of David's disparate reigns) lends credence to the equivalence in this otherwise incomprehensible reference.

Neither is it a coincidence that there were eight people aboard the ark: Noah, his three sons, & their four wives personifying the 'anointed' 8-year calendar.

"Then God said to Noah, 'Come out of the ark, you yourself, your wife, your sons, and your sons' wives with you….Be fruitful, multiply and fill the earth.'… and from these the whole earth was peopled [Genesis 8: 15; 9: 1, 19]."

And God made their line (or measure) a promise: *"I establish my Covenant with you: no thing of flesh shall be swept away again by the waters of the flood. There shall be no flood to destroy the earth again* [Genesis 9: 11]."

In terms of the calendrical hypothesis, 'the new eight-year great year' measured time so much more accurately than its predecessor, that the prospect of a future replacement of this earthly or man-made refinement had been obviated.

It reflected the nature of the solar & lunar cycles more clearly than any previous measure; the 'animals' released from the ark (*ie,* its 'nightly measures' better equating with the natural phases of the actual lunation) 'propagating' without threat of future annihilation, because commensurate.

The generic month of 30 days employed in the earlier Egyptian calendar exceeded the duration of the mean lunation by 11 hours 15 minutes 57 seconds.* Meaning that an extra calendar (or man-made) day exceeding the natural cycle of the lunation was accumulating every 64 days.†

* 30 days in a generic month – 29.530588 days in the mean lunation = 0.469412 days difference; 0.469412 days × 24 hours = 11.265888 hours or 11 hours 15 minutes 57 seconds.

† one accumulated day ÷ 0.469412 days per generic month = 2.1303247; 2.1303247 months × 30 days per generic month = 63.909741 days.

In a year of twelve thirty-day months the accumulation exceeded five days.* And these man-made days "of flesh" had to be "swept away" to align the month with God's natural cycle – but unlike added intercalations, subtracting calendar days invites chaos (*cf,* 3–13 September 1752, England).

* 0.469412 days × 12 months = 5.632944 accumulated days or 5 days 15 hours 11 minutes 26 seconds.

OLD TESTAMENT MYTH 2: The Mosaic 49-Year Jubilee Calendar

When historians include the Jubilee calendar in their reviews of ancient chronometry, they generally restrict their references to the 364-day version described (with no explicit provision for intercalation)* in the books of Enoch & Jubilees – a variable-month measure contrived so that feast days fall not only on the same date in the year but also on the same day of the week each year. This is because the antecedent from which it is supposed to have derived – the Jubilee calendar presented in the much earlier book of Leviticus – has never been deciphered.†

* *"The apocryphal Books of Enoch & of Jubilees, dating from Maccabean times in the second century before Christ, mention a year of 364 days containing exactly 52 weeks. This year is divided into four quarters each with three months of 30, 30, & 31 days. Another passage warns of the consequences of abandoning this year in favour of a lunar year. It has been suggested, on the basis of this, that the 364-day calendar ante-dated the lunar calendar & was, in essence, solar – even though there is no mention of any system of intercalation that would be required to keep this year in step with the seasons* [E.G. Richards, *Mapping Time: The Calendar & Its History,* 1998: Oxford, p229]."

† *"The job of reconstructing the original Sabbatic / Jubilee Levitical calendar is frustrated by the fact that the one used in Old Testament times has been lost to antiquity, although numerous attempts to reconstruct it have been offered* [Bob Fisher, 'The Jubilee Calendar', Olive-tree.net]."

"And you shall count seven Sabbaths of years for yourself, seven times seven years; & the time of the seven Sabbaths of years shall be to you 49 years. Then you shall cause the trumpet of the Jubilee to sound on the tenth day of the seventh month; on the day of the Atonement you shall make the trumpet to sound throughout all your Land. And you shall consecrate the fiftieth year, & proclaim liberty throughout all the Land to all its inhabitants. It shall be a Jubilee for you; & each of you shall return to his possession, & each of you shall return to his family [Leviticus XXV: 8–10]."

If we entertain the possibility, however, that the Levitical priests were implicitly directed by Yahweh to compute his measure on the strict observance of lunations (not months) rationalized to 365-day calendar – rather than actual solar – years, a solution emerges. Implicated cycle intervals include:

A	solar year	365.2422 days
B	calendar year	365 days
C	lunar year [LY]	354.36705 days (12 lunations)
D	lunation [LN]	29.530588 days
E	7 calendar years	2555 days [7 × 365]
F	49 calendar years	17,885 days [49 × 365]
G	49 solar years	17,896.867 days [49 × 365.2422]
H	50 lunar years	17,718.352 days [600 lunations × 29.530588]
J	50 LY + 6 LN	17,895.536 days [606 lunations × 29.530588]
K	606 months	17,877 days [606 months × 29.5]

After 49 calendar years (17,885 days)* it becomes evident that only 10 more days are needed to complete 606 lunations [J], or 'fifty lunar years plus six lunations' (17,895.536 days). The addition of this 10-day interval has the effect of extending their 49-year calendar measure [F] into its 50th year (striking a signal harmonic with [H] the fifty elapsed whole lunar years).

* *"Calendars, or writings that presuppose them, comprise a very substantial percentage of the Dead Sea caches. Indeed…adherence to a particular calendar is the thread that runs through hundreds of the Dead Sea Scrolls. More than any other single element, the calendar binds these works together. It is the calendar that makes the scrolls a collection. The calendar is the intentional element* ['A Reader's Guide to the Qumran Calendar Texts' in *The Dead Sea Scrolls: A New Translation* by Michael Wise, Martin Abegg Jr & Edward Cook 2005: HarperCollins, New York, revised edition, p380]."

Yet an interval intimating a lunar intercalation because it was required to fill out the incomplete 606th lunation [J] – thereby lending to its supplementary identification as a seventh 'month' beyond those 50 lunar years.

The 10-day addition makes up the difference between their 49-year solar [F], & '50-lunar-year-6-lunation' [J] cycles – while the phantom 7th 'month' implicates a measure involving 6 'months' [K].

In other words, the ten-day intercalation may be taken as part of the 50th year when protracted from the solar cycle of 49 calendar years [F], & as part of a seventh month when associated with their corresponding lunar cycle of 'fifty lunar years plus six lunations' [J].

Thus the tenth day of the seventh month completes the Atonement (an adjustment) comprising a solar extension – a consecrated 50th 'year' extending only 10 days* – required to realign their solar calendar [F] with [J] the lunar cycle (the end of their 49th calendar year coming ten days before the end of the 606th lunation).†

* *"A cardinal feature of the writer's system is the jubilee-period, which consists of seven times seven (ie 49) years. Here we are confronted with a difficulty. The passage in Leviticus (XXV. 8–14) which ordains the observance of the jubilee-year expressly identifies this, in the present form of the text, with the fiftieth year (Lev XXV. 10/1). But it is incredible that the author of [Jubilees] would deliberately have violated the express injunctions of the Pentateuch on such a matter, & we are driven to conclude that he had a text before him in which the word 'fiftieth' was absent. The wording of verses 8 & 9 is ambiguous, & allows of the explanation that the jubilee-year was the 49th & not the fiftieth. It is quite possible that in verses 10 & 11 "fiftieth" has been added to the text…[an] explanation [which] suffers from the difficulty that the Septuagint & other ancient versions (including the Samaritan text) support the currently received reading* [G.H. Box, 'Introduction' to *The Book of Jubilees or The Little Genesis* translated from the Ethiopic text by Robert Henry Charles 2005: Ibis Press, Berwick ME, p16]."

† It should be noted that the 49-year Jubilee cycle appears to derive from a compound of two 19-year (235-month or 6940-day) Metonic cycles plus an additional 11-year (136-month or 4016-day) cycle [235 + 235 + 136 = 606; 6940 + 6940 + 4016 = 17,896]. Yet both of these employed variable months of 29 & 30 days in variable years of 12 & 13 months (comprising variable lengths of 353, 354, 355, 383, 384 & 385 days); while the Jubilee cycle appears to have reverted to observed lunations. If the followers of the Jubilee measure, for instance, merely observed lunations – counting 12 to their year – they would simply need to observe another 6 lunations to bring their calendar (17,895.536 days) in line with the number of completed lunations in 49 actual solar years (17,896.867 ÷ 29.530588 = 606.04506). In other words, '50 lunar years plus six lunations' equal '49 solar years'. But because the calendar year was computed at 365 days, the Levitical priests were compelled to add ten days to their computation of 49 calendar years (17,885 + 10) to match the sum of observed lunations (17,895.536

days). It should also be noted that the 19-year cycle comprises twelve years of 12 months (144) & seven years of 13 (91); while the 11-year cycle comprises seven years of 12 months (84) & four years of 13 (52). Thus a 49-year compound cycle – employing months – would include 31 years of 12 months (372) plus 18 years of 13 (234); which conveniently matches the total number of lunations in 49 years (606).

After the intercalation of the ten-day fiftieth 'year' a new Jubilee cycle begins: the 607th lunation following directly on the heels of the 606th; while the next 49-year calendar cycle is forced to endure a delay of ten days – proclaimed a liberty – before succeeding its predecessor.

G	49 solar years	17,896.867 days
J	50 LY + 6 LN	17,895.536 days
F	49 calendar years	17,885 days [+ 10 = 17,895]
K	606 months	17,877 days [+ 18 = 17,895]

The Levitical Jubilee calendar cycle* – computed as 606 lunations [J] – equals 49 calendar years of 365 days plus a 'fiftieth year' lasting only 10 days [F]; the solar, lunar & calendar cycles 'converging' at lunation 606 [J] & month 607 day 18 [K] masquerading as day 10 'year' 50 [F].

* My interpretation of *The Damascus Document* takes the 'Remnant of Israel preserved from destruction', to refer to the survival of the Jubilee measure. Some 390 years after the Babylonian conquest of Jerusalem (597 BC), as the text maintains, the memory of the anointed measure excited a determination to renew its use, the Remnant struggling for twenty years (to 187 BC) to decipher its original workings, before ultimately concocting their own 49-year measure. In 198 BC the Seleucids established dominance over Palestine, the ensuing edict of Antiochus IV Epiphanes, prohibiting Judaism (167 BC), precipitating the Maccabean Revolt (167–163 BC). This decree was largely directed at the disruptive new calendar – Palestine for better than four centuries (597–167 BC) buckling under the regimen of the calendars of Babylon & Greece: the 8-year *octæteris* until sometime after 432 BC, then the 19-year *enneadecateris* (employed by the Seleucids – Jesus, the intrusive High Priest who bought the office from Antiochus in 175 BC, proving a militant collaborator of the Seleucids). During this period, the books of Jesus ben Sirach (180 BC), Enoch (165–105 BC), & Jubilees (160–140 BC) were composed. Comprising a signal fifty chapters (plus an appendix), Sirach – two copies recovered at Qumran – acknowledges a recognizably lunar calendar; while Enoch (12 copies) & Jubilees (also in 50 chapters – with 15 copies retrieved at Qumran) appear, with their 364-day year, to advocate a solar calendar. Yet, as demonstrated, the antecedent Jubilee measure observed lunations; while the Arabic triliteral *qmr*, signifying "moon", appears to substantiate some significant lunar association with Qumran.

OLD TESTAMENT MYTH 3: Abram & Sarai

The account of the birth of Isaac to Sarah & Abraham conceals measures which I contend establish the eight-year 99-month cycle as the innovation Abraham both personified & apparently introduced [Genesis XVII].

Yahweh (introducing himself as El-Shaddai) appears to Abram when he is 99 years old, proposing a Covenant which will make his descendants kings. He alters the names of Abram & Sarai to Abraham & Sarah (adding the letter 'h' to both names – 'heth' being the eighth letter in the alphabet)* & commands Abraham to circumcise his male children on the eighth day after their birth.

* Philologists who contend that the letter added to their names was 'he' (fifth letter in the alphabet), sustain a retrospective Judaic presumption.

Observing these octave-ordered decrees, the legendary progenitor of the 'kingdom of priests & a holy nation' is assured that he will be fruitful & establish an enduring supremacy over all nations. The 'birth of Israel' (through Isaac) may prove merely to have 'delivered' a new calendar measure: the signal eight-year 99-month cycle.

OLD TESTAMENT MYTH 4: King David's Discrepant Reigns (three drafts)

A: from *The Lunar Basis of Myth & Symbol* (2015), pp51/2

In the book of Samuel, for instance, David is accorded discrepant reigns:

"David was 30 years old when he became king, and he reigned for 40 years. He reigned in Hebron over Judah for 7 years and 6 months; then he reigned in Jerusalem over all Israel and Judah for 33 years [2 Samuel V:4/5]."

A typical commentary abandons the search for a solution, distracted by the fact that the details of David's life remain mysteriously thin, given his focal significance:

"It is hard to know how seriously to take these figures. The number 40 is often used as a round number for a generation in the Bible, and it looks suspiciously like one in David's case. Perhaps 33 was simply added to his 7½ years in Hebron (a more reliable number?) in order to bring the total to 40. Solomon is also credited with a 40-year reign. The book of 2 Samuel recounts strikingly little of David's 33 years in Jerusalem, especially given David's reputation as Israel's greatest king!' [McKenzie, *King David: A Biography,* p138 – emphasis added]."

As I've shown [*Myth as Math,* pp149–53], the discrepancy in this case may be readily resolved by recognizing that his disparate reigns in fact involve divergent calendar measures.*

* Both reigns involve the 8-year calendar: Saul personifying the initial 100-month measure; David – *8th son* of Jesse – the revised 99-month version. The 99-month 8-year cycle comprised five 12-month & three 13-month 'years'. The disparity between the duration of David's reigns (40 years 6 months) & their total (40 years) dissolves when you recognize that the variant sums may profitably be 'reduced' to an equivalent number of months. David's first reign (7 years 6 months) comprises five 12-month [60] & two 13-month [26] 'years', as well as the six additional months, for a total of 92 months [60 + 26 + 6 = 92]; while his successive reign of 33 years may be broken into four 99-month cycles [4 x 99 = 396] plus an extra 12-month 'year', for a total of 408 months [396 + 12 = 408] – the two sums combining to produce a grand total of 500 months [92 + 408 = 500]. Which equals the number of months in a 40-year reign when computed as five of the ineffectual 100-month 8-year cycles [40 = 8 x 5; 5 x 100 = 500]: *ie,* the same number of months, but a more enduring reign (given the inherent problem, after 128 years, with Saul's inferior measure). David, in other words, embodies the solution to a calendrical complication involving two disparate measures – the scripture drawing attention to the greater durability of the later 'anointed' refinement, with the conspicuous incongruity of these continguous sums.

B: Saul & David

Following the death of Ishbaal (fourth son of Saul), David (youngest of the eight sons of Jesse)* was anointed king of a united Israel.

* David is cleverly identified thus with the younger eight-year measure (comprising 99 months).

"David was thirty years old when he became king, & he reigned for forty years. He reigned in Hebron over Judah for seven years & six months; then he reigned in Jerusalem over all Israæl & Judah for thirty-three years [2 Samuel V: 4/5]." A passage presenting a conspicuous discrepancy of six months – which I contend invites the application of two distinct measures.

Both of David's reigns involve the 99-month eight-year measure, while Saul represents the flawed 100-month version.

The 99-month eight-year cycle comprised five 12-month & three 13-month 'years'. The disparity between the duration of David's reigns (40 years 6 months) & their total (40 years) dissolves when you recognize that the variant sums may profitably be 'reduced' to an equivalent number of months.

Let David's initial reign (7 years 6 months) comprise five 12-month [60] & two 13-month [26] 'years' as well as the six additional months, for a total of 92 months [60 + 26 + 6 = 92]; while his successive reign of 33 years may be broken into 4 eight-year [4 × 8 = 32], 99-month cycles [4 × 99 = 396], plus an extra 12-month 'year' [the 33rd year], for a total of 408 months [396 + 12 = 408] – the two regnal sums thus combining to produce a grand total of 500 months [92 + 408 = 500].

Which 'coincidentally' equals the number of months in a 40-year reign when computed as five of the ineffectual 100-month eight-year cycles [40 = 8 × 5; 5 × 100 = 500]: *ie,* the same number of months, but a more enduring reign (given the inherent problem, after 128 years, with Saul's inferior measure).*
David, in other words, embodies the solution to a calendrical complication involving two disparate eight-year measures – the scripture drawing attention to the greater durability of the later 'anointed' refinement, with the conspicuous incongruity of these contiguous sums.

* Extended application of the 100-month eight-year measure exhausted its usefulness in synchronizing lunar & solar cycles after 128 years, because each eight-year cycle exceeded the interval of eight solar years by 0.0625 days or 90 minutes (2922 – 2921.9376). Meaning that after 16 of the 100-month eight-year cycles, the great-year measure would be an entire day ahead of the sun, which would require subtraction to rectify. But intercalation of calendrical measures is confined to adding days to bring a lagging calendar back into step with the celestial cycles (10 days each 100-month cycle). The 99-month variant of the eight-year great-year measure rectified the defect by falling short of eight solar years by 0.9376 days every cycle (without the intercalated day). Meaning that the single day which was intercalated after each of the first fifteen eight-year cycles could be withheld after the sixteenth eight-year cycle to bring the calendar & solar cycles back into step, once an entire day difference had been accumulated [*Instructions for Restoring the Ancient Wisdom,* p50].

The apparent discrepancy in the duration of David's combined reigns is resolved by refining the eight-year measure – rendering 'David' a signal mnemonic, in 'his' segment of the scriptures, of a more decisive defeat over the cumbrous Egyptian & Babylonian measures, by the victorious 99-month variant of the superior eight-year calendar.

Saul & David, as revealed, prove to be mnemonics for the 100- & 99-month eight-year calendars respectively, during the period of conflict ('apostasy') with the resident Bel factions in Palestine (those adhering to the 360-day 'year' which required an annual adjustment of five intercalary days) – the 'Judæan monarchy' symbolizing ultimate dominion over 'the territory of Time' by proponents of the improved variable-month calendars.

Which should illustrate that the epithet 'Chosen People' refers to patriarchal figureheads (or figments) representing mnemonics of a Chosen Measure – the radical variable-month year – & its extended diffusion through time (both in the eight-year & nineteen-year great-year measures).

C: from *Myth as Math* (2007), pp149–53

Following the death of the people's king Saul at the hands of the Philistines, his sixth son Ishbaal was anointed ruler of Israæl by Saul's cousin Abner, while David was acclaimed king of Judah (initiating the division of the Israælite realm). Their forces met at Gibeon – near Ramah – 12 from either side in single combat slain in unison, before the men of David routed their opponents.

"David's followers had lost 19 men in addition to Asahel [slain by Abner], *but had killed 360 of Benjamin, Abner's men* [2 Samuel II: 30/1]*."*

Note that the suffix in 'Benjamin' – *ia-min* – is the Sumerian number 'seven', composed of *ia* (five) plus *min* (two); while the suffix in 'Abner' – *ner* – is the Akkadian number '600', his name signifying 'observer of an extended cycle', in that he is identified as the son of Ner (*cf,* Narâm-Sin) yet his name implies 'father of Ner' (circumscribing a cyclical regeneration): *eg,* 5 intercalary days per 360-day year = (600 intercalary days ÷ 5) or 120 years (→ ⅓ × 360°).

Which refers to the demise of the 360-day Bel year* & the untidy 20-day intercalary residue required by the 70-year Bakh cycle – beyond the neat accumulation of 11 intercalated months – to justify the Egyptian 'great year' solar measure with the solar cycle (*Myth as Math,* p257).† Twelve on twelve producing 'two retired sums', to memorialize opposing 8-year measures (*ie,* 2 'years') in a concerted defeat of the duplex Bel calendar.

* Ishbaal personifying 'man of Baal'.
† 20 days = two-thirds of a 30-day month (recalling the unique Egyptian hieroglyphic character preserved for the fraction ⅔).

Then, following the death of Ishbaal, David was anointed king of a united Israæl. *"David was thirty years old when he became king, & he reigned for forty years. He reigned in Hebron over Judah for seven years & six months; then he reigned in Jerusalem over all Israæl & Judah for thirty-three years* [2 Samuel V: 4/5]*."* A passage presenting a conspicuous discrepancy of six months – which I contend invites the application of two distinct measures.

Both reigns involve the 99-month 8-year measure. 'Seven years & six months' combines the five 12-month, with two of the three 13-month, years of the 99-month calendar, to produce an aggregate 86 months, which projects a sum of 92 months with the addition of 6 months.*

* 5 × 12 = 60; 2 × 13 =26; 60 + 26 = 86; 86 + 6 = 92.

While the reign of 33 years comprises four 99-month cycles plus one of the 12-month years to compound a sum of 408 months – the two sums combining to make a total of 500 months (which just happens to equal the number of months in the 40-year reign of David when computed as five of the older 100-month 8-year cycles).*

* 4 × 99 = 396; 396 + 12 = 408; 408 + 92 = 500 = 5 × 100.

The apparent discrepancy in the duration of these combined reigns is resolved by refining the 8-year measure* – rendering 'David' a signal mnemonic, in 'his' segment of the scriptures, of a more decisive defeat over the Bel measure by the superior 99-month variant of the 8-year calendar. Which explains why his second son is named Daniel – the Dan measure of the 99 Danaïds having been preceded by the 100-month eight-year Set measure. And David's son Daniel, beloved of Abigail, was nurtured in the amnion of Okeanos enveloping the sanctuary of Carmel – some 35 miles south of Tyre, home of the princess Jezebel & her mythical counterpart, Europa (sister of Cadmus).

* the same number of months comprising a more lasting reign.

Yet the scriptures preserve what appears to be an earlier 99-month mnemonic, in the story of Abram's conception of Isaac (*Myth as Math,* p13), & even earlier 100-month mnemonic, in the cumulative genealogies of the sons of Noah (*Myth as Math,* p20, fn53) – both intended, in my view, to trace the descent of the Chosen 'variable measure' among ancestors from [a] the Caucasus (Ararat),* & [b] Sumeria (Ur).†

* which agrees with the Greek accounts of the 'father' of Man – Prometheus – & the Golden Fleece; *cf,* Urartu.
† conforming with the Sumerian scriptures concerning Gilgamesh, & Ziusudra (Ziusuddu) or Ut-Napishtim [Assyrian]: *ie,* Noah.

In fact, the accounts of three diffusions in the Pentateuch – adding the Exodus from Egypt (Avaris) – adopted 'the progression of calendrical refinements' as a model of the movements of their lunar forebears: [a] Noah & his sons representing the earliest, or 100-month, Chosen measure – to establish the diffusion from the Caucasus cradle as the initial spread of calendrical insights; [b] Abram symbolizing the next, or 99-month, Chosen measure – to correlate a subsequent departure from Ur; & [c] Moses & the Sons of Isræl characterizing the climactic 235-month Chosen measure – to conclude the final departure, from Egypt.*

* Chosen (Set) measures were distinguished by the variable-month year (both 8-year measures embracing the single intercalary day).
Note that the development of the calendar refinements isn't being attributed to, but rather represented by, the respective patriarchs, in an extended analogue of progressive advancements; *cf,* 'ur' / 'ar' consonance blazoning the trail: Ararat, Urartu, Ur & Avaris – which, according to Bernhard Anderson, was rebuilt by Seti I & Rameses II, with the labour of the Chosen People, as Tanis (tan = dan), the northern capital of the 19th Dynasty (*Myth as Math*, p5, fn3), though John Van Seters contends they were distinct.

Yahweh, in this regard, represents the contraction of five intercalary days of the Babylonian & Egyptian measures, into a single day (at the end of the 99-month eight-year calendar) – his unutterable name (comprised only of vowels) derived from the Sumerian word for 'five': *ia.** In otherwords, Yahweh initially deified a singular figure subsuming the antecedent measure 'five'.

* Menninger, *A Cultural History of Numbers,* p165.

Saul & David, as revealed, prove to be mnemonics for the 100-month & 99-month eight-year calendars respectively, during the period of conflict ('apostasy') with the resident Bel factions in Palestine – the monarchy symbolizing the ultimate domination of territory by the Bran proponents. Which should illustrate that the epithet 'Chosen People' refers to patriarchal figureheads (or figments) representing mnemonics of a chosen Measure – the radical variable-month year* – & its diffusion through time.

* in otherwords the partriarchs *alone* were referred to as 'chosen' because they were purely projections of the new-God measure (*Ia* = a single intercalary day in place of 5), each representing a select aspect or consequence of the revolutionary calendrical refinement: Noah, Abram, Isaac, Jacob, Joseph, Moses, Joshua & David, *contrived* to preserve the parameters of an alternative or 'chosen' measure.

The Set / Dan* measure – satanized by the Egyptians & ultimately by the proponents of Judaic monotheism – was initially expelled from the Delta to a temporary refuge in Judah before the Egyptian forces of Seti I & Rameses II pursued its proponents north to Sidon (set-tan → satan → Sidon).

* *Myth as Math* (pp247–67) traces ancient calendar refinement through nine *putative* measures:
[1] **BEL:** twelve 30-day months in a 360-day year requiring 5 added intercalary days every year in Egypt (or an extra embolismic month every six years in Babylon);
[2] **APIS:** the Egyptian 25-year lunar calendar comprising 9125 days (based on the 25-year cycle of 309 lunations comprising 9124.9516 days);
[3] **BAKH:** the Egyptian 70-year solar cycle comprising 865 months totalling 25,550 days;
[4] **MENDES:** the Egyptian 350-year great-year cycle comprising 4326 lunations totalling 127,750 days;
[5] **PHŒNIX:** the Egyptian 500-year great-year cycle comprising 6180 lunations totalling 182,500 days;
[6] **SET MEASURE:** introducing the concept of a variable-month calendar of alternating 29-day male & 30-day female months;
[7] **DAN:** the erroneous first Hellenic 8-year great-year calendar comprising 100 variable months totalling 2912 days requiring the addition of 10 days at the end of every 8-year cycle;
[8] **BRAN:** the second, corrected Hellenic 8-year great-year calendar comprising 99 variable months totalling 2921 days requiring the addition of a single day at the end of every 8-year cycle. Known as the *octæteris* it was purportedly introduced with the Olympic Games [776 BC].
[9] **METONIC:** the Hellenic 19-year great-year calendar comprising 235 variable months totalling 6940 days (based on the Metonic Cycle comprising 235 lunations comprising 6939.6882 days). Known as the *enneadecateris* it was reportedly introduced in 432 BC. According to my research, the 'giant' in ancient iconography represents 'extended calendar measure' (*eg,* Humbaba, Geryon, even the Trojan Horse, *et al*); the embodiment of a variety of protracted attempts to rationalize solar & lunar mechanics. The 'great year' after all, has long been recognized as a focal feature of ancient chronometry, *eg:* the Hellenic 8-year *octæteris* & 19-year *enneadecateris* (or Metonic cycle), 25-year Egyptian lunar calendar, 49-year Israælite Jubilee measure, *etc* (not to mention the Gregorian leap-year cycle).

The majority of Set / Dan adherents appear to have removed further to Crete & the Ægean littoral to escape their pursuers, preserving the Dan measure of brothers Zeus, Poseidon & Hades – the Titan gods (or representative phases) of the 100-month pantheon displaced by the Olympians of the new variable-month year. While a remnant of radical priests sustained the chosen measure in Palestine – their scriptures (secreting the figurative details of the improved calendar) quantifying the refinements, in a paradigm of patriarchs rather than gods, which elevated the feature of the single intercalary day to pre-eminence, or 'divine' status. This distinction between the Hellenic & Hebrew Dan (*ie,* Bran) measures succeeded the 'relocation' of the tribe of Dan (notably the fifth son of Jacob – with Bilhah, maidservant of Rachel).*

* Dan concentrating the five intercalary days of the original Bel measure (as *IA* integrated the measure '5' into a single integer: thus the epithet 'hand of god') – the unit-of-five measure ultimately diverging into two variants (100- & 99-month) allegorized in the relocation of Dan to the environs of Tyre (Carmel) & Sidon where the split (or departure) occurred.

"To the tribe of the sons of Dan came the seventh portion * [of Canaan] *according to their clans….But the territory of the sons of Dan resisted them; and therefore the sons of Dan went up and attacked Leshem and captured it and put it to the sword. Having seized the town they settled in it, and changed the name of Leshem to Dan after Dan their ancestor. This was the inheritance of the tribe of the sons of Dan, according to their clans: these towns with their villages* [Joshua XIX, 40, 47/8]."

* Set – fifth of the seven focal phases (*Myth as Math,* p92, fn248f), whose terminal form, waning crescent, comprises the seventh focal phase (Osiris, Lord of the Underworld) – lends his name to the number 'seven' (*septem*) & attendant sabbath (the duty of resting on the seventh 'day' predicated on the observation of the duplex aspect of the waning crescent: computed alternately as the 29th or 30th day of the variable month); resting, to signify two successive counts involving the seventh focal phase.

Note that Benjamin – youngest of the twelve sons of Jacob (embodying a 'summary') – in this sense, incorporates 'five' (Ben = *pente*) & 'seven' (*ia* + *min*), while standing twelfth.

Last to receive their portion of Canaan, the sons of Dan* alone were compelled to move – purportedly because the residents repelled their advance (though one might expect that that would be a likelier eventuation for the incursions of earlier rather than later tribes…).

* the first three portions (all east of the Jordan) were allotted to the eldest sons of three of the mothers of Jacob's children, while Dan – eldest son of the fourth – received the twelfth (or thirteenth) portion overall, described as the last of seven remaining portions (following the disposal of the eastern precincts & the portions for Judah, Ephraim & the western half-tribe of Manasseh); Judah, whose portion was adjacent to that of Dan in the south (& consumed the potentially more resistant section of Philistia to the south, than that of Dan), therefore received the fourth apportionment *in place of Dan;* while Dan's removal to the north placed the tribe among the four northern tribes of Zebulun, Issacher, Asher & Naphtali whose portions fell eighth through eleventh (or ninth through twelfth, given that Mannaseh received both the third & sixth apportionments); Dan, in effect, accorded the youngest's portion [Joshua XIII – XIX].

Note that the interchangeability of Judah (*fourth son* of Jacob), & Dan (fifth son), is prefigured in the position of the tribe of Dananites descended from the youngest or *fourth son* of Javan, *fourth son* of Japheth (4 + 4 = 8-year cycle) [Genesis X: 2–4].

C | BIBLICAL MYTHS: NEW TESTAMENT

NEW TESTAMENT MYTH 1: 153 Large Fish

When the resurrected (though yet unrecognized) Christ reveals himself to the seven fishermen at the Sea of Galilee (in His third appearance to the apostles) He directs them to cast their net over the right side of the boat (John 21: 6), producing a catch of '153 large fish', a figure which has stumped scholars for two millennia. Given that the moon, however, appears to descend each morning into the waters of 'the underworld', "large fish", by extension, may in fact refer to 'a month-long cycle of lunar phases' (the spent lunation conceived as a 'school' of submerged or extinguished phases).

Because the mean lunation extends 29.530588 days (as scientifically computed), compound lunations never strictly comprise whole-day products. But 153 lunations (which accumulate 4518.179964 days employing the modern rounded measure)* come close enough to a whole-day product to invite the projection of an ancient average cycle of 29.529412 days, when those 153 lunations have been computed to extend an even 4518 days† (a difference, remarkably, of only 0.001176 days or 101.6 seconds per lunation, from the modern mean).‡

* 153 x 29.530588 = 4518.179964.
† 4518 ÷ 153 = 29.529412.
‡ 29.530588 – 29.529412 = 0.001176 days; 0.001176 days x 86,400 seconds/day = 101.6064 seconds.

The authors of the Gospel of John (arguably the Essenes), in other words, conceivably settled on the figure of 153 large fish as 'an integral expansion' of compound lunations (comprising an even 4518 days). The implicit 29.529412-day calculation, then, may tentatively be taken to represent their putative measure of mean lunation.

Corroborating the assumption that 'large fish' represent lunations, 4518.179964 days comprise 12.370367 years,* a quotient remarkably coincident with the number of lunations in a solar year

(12.368267).† Dividing the Julian year (365.25 days) with the putative Essene measure of mean lunation (29.529412 days), moreover, produces an even nearer convergence of 12.369024 lunations per year.‡

* 4518.179964 ÷ 365.2422 = 12.370367.
† 365.2422 ÷ 29.530588 = 12.368267.
‡ 365.25 ÷ 29.529412 = 12.369024.

The difference between this projected quotient & the actual measure (0.000757 lunations per year)* amounts to a disparity of slightly more than half an hour a year† or a mere 2.6 minutes per lunation.‡ In other words, 153 lunations 'coincidentally' surrender the same number (in years) as there are lunations in a year.

* 12.369024 – 12.368267 = 0.000757.
† 29.530588 x 0.000757 = 0.022355 days; 0.022355 days x 1440 minutes/day = 32.19 minutes.
‡ 32.19 ÷ 12.368267 = 2.602685.

The authors of the Gospel of John managed to settle on a sum of large fish (hypothetically lunations) which 'coincidentally' incorporates remarkably accurate measures both of the mean lunation (29.529412 days) & the number of lunations in a solar year (12.369024); as paradigmatic a pivot of lunar expansions as one could conceivably summon.

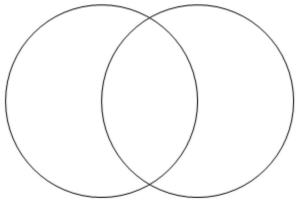
In other words, while the puzzle of 153 large fish has baffled Biblical scholars for two thousand years, 'coincidences' delimiting the precise synodic relation between lunar & solar cycle (both annually & cumulatively), emerge when the phrase is figuratively interpreted as a metaphor for 'lunations'; a previously unconsidered solution which implicitly confirms the conjectured cipher.

And since there are other lunation compounds which approach whole-number products even nearer – calendars being ideally constructed to harmonize extended measures, such as leap-year cycles, with integral solar & lunar intervals – the significance in settling on the figure '153' can be shown to reside additionally in its incorporation of 'factors constituting signal measures of lunar cycle' (9 × 17 = 153): '9' representing the number of focal or identifiable phases in the lunation (seven recognizable spectres visible serially on high; plus two invisible aspects presumably resident in the underworld, presiding successively over the two terminal dark nights); & '17', the abominable pivotal number of downfall (day 17 in the lunar sequence inaugurating the waning arc of the cycle).*

* It bears noting that the waning arc would reflexively be oriented on the left side of an idealized lunation schematic or 'compass' because the curved left arm when raised resembles waning crescent, the terminal visible waning phase.

Both factors (being associated expressly with the underworld) necessarily direct attention to elapsed measures which have already disappeared into the extinguishing waters (precisely like the accumulated phases of 153 departed lunations).

While Pythagorean overtones from this expressly figurate number establish its 'sacred' or geometrical primacy, none satisfactorily elucidate the focal concepts of 'fishing' & 'large fish': [a] as the sum of the first 17 integers, '153' constitutes the 17th triangular number (the abominable number '17' invoking a sequence categorically associated with 'downfall'; as with a measure of elapsed or fallen phases); [b] it incorporates the sum of the first five positive factorials (1, 2, 6, 24, 120), tenuously underscoring the significance both in the factored division of the number '153' & the factoring characteristic of the seven rejected lunation compounds cited above; [c] the progression of its digits are all triangular (1, 15, 153); [d] its digits generate it as a product (3 × 51); & [e] it is comprised of the sum of the cubes of its digits (1 + 125 + 27).



It should also be noted that this signal 'resurrection' number has been associated further both with the 'vesica piscis' (or 'mandorla') & Rosary (the Trinity crowning 15 rounds of 'ten Hail Marys' to produce the sum 153). The ancient method of constructing a square with rule & compass involved equal intersecting circles with circumference on the opposing centre, whose lens (or common area) appears piscine: the geometrical 'vesica piscis' ("fish bladder"). When the short axis of the lens is 1, the long axis is the square root of 3; denoted by Archimedes (287–212 BC) with the ratio 153:265 (then known, revealingly, as the 'measure of the fish').*

* The circles further relinquish the square root of '2' & '5' respectively on the diagonals of the inscribed square & rectangle. While primes '3' & '5' each comprise the difference between successive squares (3 = 4–1; 5 = 9 – 4). A figure (of intersecting circles) which not only relates the square roots of the first three prime numbers but also projects 'the circle inscribed in a square' (the symbol for the 16th letter in the earliest Alphabet denoting 'second full moon on day 16 of the cycle). The figure, furthermore, from which the repeated ratios involving the square roots of '2', '3' & '5' respectively, in early Mediaeval architecture, were drawn. It bears noting also that the Pythagoreans (not to mention, Gnostics) considered '50' a "supremely sacred" number (according to Philo), the squares of the 3-4-5 triangle (9 + 16 + 25 = 50) concealed in the sum: the so-called Pythagorean triangle thereby epitomizing 'Jubilee'.

Both Porphyry (234–305) & Iamblichus (250–325) recount an episode in the 'life' of Pythagoras (569–490 BC) when he correctly guessed the number of fish in a net (widely held to prefigure the Biblical account, given both the ratio & epithet of Archimedes). In other words, the association of the number 153 with 'fish' appears to have extended back at least to the time of Archimedes if not Pythagoras (leaving little doubt that the gospel of John was contrived to implicate Christ in an ancient tradition of calendrical insight).

NEW TESTAMENT MYTH 2: The Number of the Beast

The number of the Beast traces its origin back to the New Testament book of Revelation which is presumed to have been composed by John the Divine,* sometime late in the reign of the Roman Emperor Domitian (81–96).†

* *"To this island* [Patmos] *the apostle John was banished from Ephesus, evidently for some months about the year AD 95, and here he wrote his Revelation (Rev 1:9)* [New Bible Dictionary, p884]."
† *"…attested by a number of ancient authors, such as Irenæus and Eusebius, who state categoricaJly that the book was written in the time of Domitian* [New Bible Dictionary, p1028]."

"There is need for shrewdness here: if anyone is clever enough he may interpret the number of the beast: it is the number of a man, the number 666 [Revelation XIII: 18]."

The last book in the Bible & only apocalyptic work in the New Testament, Revelation remains more "unintelligible" than any other Biblical account. ***"This is largely because it abounds in symbolism of a type that we do not use & to which we no longer possess the key*** [New Bible Dictionary, p1027]."

Scholars have long sought to recover this key through the practice of numerology, or number mysticism. Driven by the suspicion that Biblical numbers such as the Number of the Beast, might represent the names of historical figures in cipher, they have appropriated or confected a variety of artificial systems equating letters with numbers, in their attempts to identify them (Kabbalah remaining one of the more elastic of these systems).*

* there are various systems of Kabbalistic (Judaic) & Cabalistic (Christian) interpretation.

Bishop of Lyon, Irenæus (130–202) was the first on record to have sought the identity of the Beast in this manner, arriving at three possible culprits – Evanthas, Lateinos & Teitan – by employing the Hellenic alphabetic numerals. Which reveals, at least, that an explanation for the Number of the Beast had not circulated with the earlier traditions of the Church.

Eventually the theologians came to believe that the Beast with seven heads & ten horns, in all probability refers to *"a succession of seven Roman emperors;* [while the] *ten crowned horns are ten subject kings* [Revelation XIII: 11 – note g]."

But the Number of the Beast has eluded decipherment: *"Codes & riddles were made in both Greek & Hebrew by using numbers for letters, according to their order in the alphabet. Some commentators have claimed that 666 is the total of the number values of 'Nero Cæsar'* [Revelation XIII: 18 – note 1]." Others have worked the numbers to exhume Martin Luther,* Emperor Napoleon,† 'euporia' the ancient Greek term for "wealth",‡ & a host of complementary numerological bêtes noires.§

* Peter Bungus, *Numerorum Mysteria* (1584: Bergamo).
† Leo Tolstoy, *War & Peace* (1865–8: Moscow).
‡ John Taylor, *Wealth: The Name & Number of the Beast* (1844: UK).
§ David Thom, *The Number & Names of the Apocalyptic Beasts* (1848: London).

Mathematicians too, examined the Number of the Beast, largely to dismiss the number mystics, but also to see if they might not detect in it a product, quotient or sum of related measures. Many of these investigations focused on magic squares, while others looked to prime numbers or the Fibonacci sequence for clues.* Yet the puzzle remained unsolved.

* John Napier, *Plain Discovery of the Whole Revelation of St John* (1593) [*cf,* Dudley, *Numerology or, What Pythagoras Wrought,* pp67–73].

My solution invites a radical interpretation of all Biblical figures.

The Number of the Beast is a mathematical sum – not a numerological figment – involving the Roman numerals. There were only seven – seven letters of the alphabet which doubled as numbers:
I (1); V (5); X (10); L (50); C (100); D (500); M (1000).

The first six of these numerals add up to 666. While the numeral M (1000) is figuratively focal to the 'millennial' references in the succeeding verses of Revelation.

"Then I saw an angel come down from heaven with the key of the Abyss in his hand & an enormous chain. He overpowered the dragon, that primeval serpent which is the devil & Satan, & chained him up for 1000 years. He threw him into the Abyss, & shut the entrance & sealed it over him, to make sure he would not deceive the nations again until the thousand years had passed. At the end of that time he must be released, but only for a short while [Revelation XX: 1–3]."

The narrative cryptically refers to the ancient model of the lunation, which featured seven conspicuous lunar phases* amid 20 or 21 unidentifiable spectres – the seven Roman numerals according conveniently with these focal phases.

* [3] waxing crescent; [9] waxing half-moon; [15] first full moon; [16] second full moon; [17] first waning phase; [23] waning half-moon; [29/30] waning crescent – ordinals referring to the usual nights in the lunation when these seven focal spectres appear [*cf,* Drumbolis, *Instructions for Restoring the Ancient Wisdom,* pp19/20].

The seventh numeral, accordingly, designates waning crescent – the last visible phase in the sky before the moon descends into the abyss for two dark nights. Characterized as an angel who chains the serpent up for 1000 years, the crescent held 'the key' to unlock the underworld gates precisely because it is the last phase visible on high prior to the submergence of the lunation.

'A thousand years' alludes to the seventh or final phase – whose duration is a single night, not 1000 years – through an ordinal correlation: both 'M' (1000) & waning crescent comprising the seventh figure in their respective models.*

* *"Kepler used symbols analagous to I, V, X, L, but instead of the numbers one, five, ten and fifty he selected one, three, nine, twenty-seven, and so on. In this way he expressed any whole number very economically; for instance, 20 = 27 – 9 + 3 – 1* [Turnbull, *The Great Mathematicians,* p76]."

Earlier in antiquity, the focal phases of the lunation had been identified as gods:* waxing crescent as Egyptian Horus or Greek Ares; waxing half-moon as Thoth or Hermes; first full moon as Amon or Apollo; second full moon as Ra or Zeus; first waning phase as Set or Poseidon; waning half-moon as Ptah or Hephæstus; waning crescent as Osiris or Hades / Pluto. But with the rise of Monotheism they had to be reassigned as angels.†

* *cf,* Drumbolis, *Myth as Math,* pp55–7.
† seven angels: Uriel, Michael, Raguel, Raphael, Sariel, Remiel, Gabriel – still divine but now expressly God's messengers – their letters of the alphabet having been drawn from the lunation (see *God's Wand*)

The enormous chain in which the terminal phase binds the serpent, links all the spectres of the lunation together. The serpent which was thought to inhabit the underworld, was envisioned as having taken the moon captive during its two-night absence from the sky (when the serpent – "released, but only for a short while [two nights]" – had assumed the vacant throne of the rightful ruler of night).

The sum of the first six Roman numerals was ascribed to the Beast only after the first six focal phases had had their nights – the final phase, waning crescent, alone left to keep him from consuming the entire lunation. The Beast had swallowed the first six focal phases, digesting a sum of 666.

Names composed of letters which double as numbers, lead inevitably to the suspicion that Biblical names might all have been conceived as ciphers.* Exciting a systematic search for numerate insights into the more enigmatic texts of the Bible (gematria). Which remain incomprehensible because the model upon which they are based has never before now been correctly identified.

* *eg,* 'LVCI [fer]' or "light-bringer" – associated variously with the moon & Venus; the Roman numerals comprising the Number of the Beast, may also be arrayed to juggle up the Latin 'LVCID[e]X' or "no light" (examples tendered hypothetically, solely to illustrate the process).

While earlier forms of the Roman numerals have been conjectured,* it is the system's limit of seven components & Latin term for "thousand" – the acrophonic 'mille' – which invite the parallel. Considering the date of composition of Revelation, the contemporaneous development of the complete system of Roman numerals further supports its adoption as a parallel in these passages.†

* initially by "…T. Mommsen (1840) & E. Hübner (1885)… [Ifrah, *The Universal History of Numbers,* p187]."
† *"Known instances of the use of L, D & M as numerals do not go back much farther than the first century AD. To the best of my knowledge, the oldest Roman inscription using L for 50 dates from 44 BC [Corpus Inscriptionum Latinarum Vol I, inscription 594]. The oldest known use of M & D as numerals is in a Latin inscription dated 89 BC [Corpus Inscriptionum Latinarum Vol IV, inscription 590], in which the number 1500 appears as MD* [Ifrah, *From One to Zero,* p131]."

And, notably, the name* & nature† of the Beast both accommodate a calendrical theme.

* *therion* "wild animal; beast; wolf"; *cf,* Cerberus, an underworld canine; also, Cynus, the designation for the Greek 8-year calendar – 'great-year measures' categorically associated with the underworld both because they weren't in evidence on high through observation, & they periodically required intercalary adjustments – phantom or (ghostly) underworld days added to a completed calendar cycle to postpone the start of a new calendar cycle until the natural cycles had returned to their respective starting points [New Bible Dictionary, p128].
† *monster "imaginary animal compounded of incongruous elements, eg, centaur, sphinx, griffin* [OED, p783]." *cf,* lunisolar calendar compounded to reconcile incongruous cycles: solar & lunar [moonster].

NEW TESTAMENT MYTH 3: Revelation

"When the thousand years are over [when waning crescent is extinguished], *Satan will be released from his prison* [the dark lord of the underworld presiding over the two nights of darkness between crescents] *& will come out to deceive all the nations in the four quarters of the earth* [worldwide], *Gog & Magog* [first & second dark nights], *& mobilize them for war. His armies will be as many as the sands of the sea* [underworld desert intimating desertion from on high, the moon submerged in the underworld]; *they will come swarming over the entire country* [of the lunation] *& besiege the camp of the saints, which is the city that God loves* [heaven]. *But fire* [waxing crescent characterized in Egypt as Horus the Avenger] *will come down on them from heaven & consume them* [Revelation XX: 7–9]."

The angels at the four corners of the earth holding the four winds of the world back (Revelation VII: 1) accord with the four focal lunar phases at the 'corners' of the lunation – opposing crescents & twin full moons – when ordered about a compass.*

* *cf,* Drumbolis, *Instructions for Restoring the Ancient Wisdom,* p20 – the lunation conceivably 'turned' at those flexures 'by the winds'.

"Then I saw another angel rising where the sun rises, carrying the seal of the living God; he called in a powerful voice to the four angels whose duty was to devastate land & sea. 'Wait before you do any damage on land or at sea or to the trees, until we have put the seal on the foreheads of the servants of our God.' Then I heard how many were sealed: 144,000, out of all the tribes of Israæl [Revelation VII: 2–4]."

A sum which harbours calendrical significance. The sons of Israæl numbered 601,730 before crossing the River Jordan into the Promised Land.* Thus 457,730 of them† were left unprotected. A number which conceals a calculation for the length of the mean lunation – to within 33 seconds.‡

* Numbers XVI: 51.
† 601,730 – 144,000 = 457,730.
‡ 457,730 ÷ 15,500 = 29.530967 which is 32.7456 seconds longer than the mean lunation as calculated today: 29.530588 days. The product of 15,500 mean lunations as calculated today is 457,724.11 days – 6 days short of 457,730. Which appears to be why the author(s) of Revelation designated this sum of six Roman numerals as Satanic – six of the 457,730 days in their calculation being confined to the underworld.

This is all the more remarkable because, as I have shown in an earlier work,* the number 601,730 also relinquishes another dramatic quotient illustrating the improvement of the Hebrew year over that of the Egyptians.

* 601,730 ÷ 122,100 = 4.9281736282 which represents the number of the Sons of Isræl from the remaining two tribes of Judah & Benjamin, divided into the number of the twelve tribes. 4.9281736282 × 365.25 = 1800 which is also the product of five Egyptian years of 360 days; or in other words, the Hebrew refinement of a 365.25-day calendar converges at this multiple of 4.9281736282 years, with five Egyptian years, dramatizing the improvement over the correlative Egyptian measure [Drumbolis, *Instructions for Restoring the Ancient Wisdom,* p67].

Concerning earlier theories, it bears emphasizing that tonic, geodetic, astronomical (in its strict application to 'stellar mechanics'), astrological, numerological (as opposed to numerate), emblematic, architectonic, metaphysical, psychoanalytical, phenomenological & eschatalogical – not to mention euhemeristic & extra-terrestrial – explanations of ancient myth, all fail to account for the occurrence & significance of 'extreme sums' in the esoteric accounts; enigmatic compounds from a diversity of cultures which accord with extended calendar measures, *eg:* Sumer (1,152,000); Akkad (195,955,200,000,000); Babylon (12,960,000); Egypt (1,422,000); & Mesoamerica (1,872,000 or 13 b'ak'tun each 144,000 days – which likewise appears in Revelation VII: 4).

"Then I was given a long cane as a measuring rod, & I was told, 'Go & measure God's sanctuary, & the altar, & the people who worship there; but leave out the outer court & do not measure it, because it has been handed over to pagans – they will trample on the holy city for 42 months. But I shall send my two witnesses to prophesy for those 1260 days, wearing sackcloth' [Revelation XI: 1–3]."

The measure involved is readily recognizable as the 30-day Egyptian month.* Two passages in a later chapter confirm that these 1260 days were reckoned as 3½ Egyptian years of 360 days.†

* 1260 ÷ 42 = 30.
† the pregnant woman standing on the moon, with a crown of 12 stars, who escapes into the desert for 1260 days following the birth of her son with the serpent in pursuit *"where she was to be looked after for a year & twice a year & half a year* [Revelation XII: 1–6; 13/4]"; 360 × 3.5 = 1260.

In a lunar thesis, 'a period in the desert' directs attention to the interval of darkness separating waning & waxing crescent – 3 daytimes & 2 night-times. Thus, a period of 1260 'days in the desert' comprises 504 dark intervals of 2½ days (2½ notably one-twelfth of 30).*

* 1260 ÷ 2.5 = 504 ('wearing sackcloth' not far removed from 'in a sack').

Which involves 504 lunations. But the text specifies the 30-day month. Thus, 504 months of thirty days accumulate 15,120 days.* Dividing 15,120 by 360 (the number of days in the year specified) establishes an extrapolation of 42 years of 12 months of 30 days.†

* 504 × 30 = 15,120.

† 15,120 ÷ 360 = 42.

Meanwhile 42 Egyptian months harbour 105 'dead' days in the desert.* Which conveniently amount to 3½ Egyptian months.†

* 42 × 2.5 = 105.
† 105 ÷ 30 = 3.5 [3.5 × 12 = 42; 105 × 12 = 1260].

These figures relating to the outer court of the sanctuary – the only portion afforded measures – clearly accord with the dark interval of the mean lunation.

"These are the two olive trees & the two lamps that stand before the Lord of the world. Fire can come from their mouths & consume their enemies if anyone tries to harm them; & if anybody does try to harm them he will certainly be killed in this way. They are able to lock up the sky so that it does not rain as long as they are prophesying; they are able to turn water into blood & strike the whole world with any plague as often as they like. When they have completed their witnessing, the beast that comes out of the Abyss is going to make war on them & overcome them & kill them. Their corpses will lie in the main street of the Great City known by the symbolic names Sodom & Egypt, in which their Lord was crucified. Men out of every people, race, language & nation will stare at their corpses, for 3½ days, not letting them be buried, & the people of the world will be glad about it & celebrate the event by giving presents to each other, because these two prophets have been a plague to the people of the world. After the 3½ days, God breathed life into them & they stood up, & everybody who saw it happen was terrified; then they heard a loud voice from heaven say to them, 'Come up here,' & while their enemies were watching, they went up to heaven in a cloud. Immediately there was a violent earthquake, & a tenth of the city collapsed; 7000 persons were killed in the earthquake, & the survivors, overcome with fear, could only praise the God of heaven [Revelation XI: 4–13]."

The corpses of two prophets lying in the main street of the Great City for 3½ days, invite multiplication: 2 × 3½ = 7 (the seven focal lunar spectres). The Great City represents 'great-year' cycle: both the Egyptian 25-year lunar measure & the Hebrew 8-year calendar. Main street of the Great City is the lunar cycle. The '7000 consumed by earthquake' represent the product of the seventh focal, or terminal, phase of the lunation (waning crescent) with its Roman numeral ascription: 7 × 1000 = 7000.

The final spectre in the lunation descends into the earth as into a fissure opened by a quake. The tenth of the 'city' (or 30-day month) computes the 3-day dark interval.

Despite the evidence, scholars maintain that numbers can be made to support any thesis – even those who know the difference between mathematics (numeracy) & numerology.

"It is very difficult to know whether there is anything of value in these theories about counting the markings on bones or stones. Numbers can be arranged in so many possible ways & there is also the risk that people in search of certain patterns discard or ignore bones or rocks that bear other numbers of markings, leaving them with only the specially selected ones that they think provide evidence for whatever theory they want to prove." – Aczel, *The Cave & the Cathedral,* pp165/6.*

* Palæolithic stones & bones bearing lunar counts were the dominant focus of an extensive study by Alexander Marshack, *The Roots of Civilization: The Cognitive Beginnings of Man's First Art, Symbol & Notation* (1972) McGraw-Hill, New York.

Yet none of the numbers in the foregoing portions from the book of Revelation have been satisfactorily explained – the generic glosses from the editors of the Jerusalem Bible contending, for instance, that the 7000 merely represent *"a great number of all classes"*.* Or that the 144,000 marked with God's seal

signify little more than *"twelve (the sacred number) squared & multiplied by 1000, representing the totality of the faithful"* referring to a core 12,000 from each of the twelve tribes of Israæl.† Not the slightest insight into the reason for so many explicit & expansive numbers.

* Revelation XI: 13 – note g.
† Revelation VII: 4 – note c.

The magnitude of 'coincidence' scholars would have you categorically dismiss – rather than consider a hypothesis like mine, where so many of the numbers have been explained with the same uniform model – is far from slender. If numbers can be so easily "arranged in so many possible ways" how is it that no one in all these years has ventured an explanation of Biblical numbers based on 'coincidences' with models other than the lunation? That is, without stooping to ciphers. The Number of the Beast, like all the other numbers cited, clearly does become coherent in a lunar light.

D | HELLENIC MYTHS

HELLENIC MYTH 1: Œdipus

> *"I saw the mother of Oidipous, Epikastê,*
> *whose great unwitting deed it was*
> *to marry her own son. He took that prize*
> *from a slain father; presently the gods*
> *brought all to light that made the famous story.*
> *But by their fearsome wills he kept his throne*
> *in dearest Thebes, all through his evil days,*
> *while she descended to the place of Death,*
> *god of the locked & iron door. Steep down*
> *from a high rafter, throttled in her noose,*
> *she swung, carried away by pain, and left him*
> *endless agony from a mother's Furies."*

Homer, *The Odyssey* Book XI: *A Gathering of Shades,* lines 271–80, translated by Robert Fitzgerald (1961: Doubleday, p183) – concerning Odysseus on the shores of Okeanos visited by the shades of the dead from Erebus (the underworld).

Though the tale has never been considered in this light before, the Œdipus myth reflects a lunar origin. Œdipus (waning crescent) kills his father by extinguishing the lunation. He has a swollen foot because the actual lunation of 29.530588 days led to the invention of the Greek eight-year calendar in which adjacent months were variously 29 & 30 days: two months totalling 59 days (two lunations totalling 59.061176). This further accounts for the duplex cognomen for waning crescent in the Greek calendar (Hades/Pluto), the final phase requiring different names for the 29-day & 30-day months (Pluto meaning "wealthy" for the wealthier 30-day month).

After killing his father he sleeps with his mother (in the underworld where he has descended after the lunation is extinguished) producing two sons & two daughters (there are two nights & two days of no moon in the sky between lunations) who further equate with Anubis & Horus (the sons of Osiris) & Nephthys & Isis (the two underworld goddesses) in the Egyptian myth of Osiris as waning crescent. He blinds himself on discovering his incest, which alludes both to the darkness of his new underworld abode & the fact that the darkness has kept him from recognizing his mother before committing the unpardonable sin.

His solution to the riddle of the Sphinx summons a cyclical model – expediently interpreted as 'Man' who crawls on all fours at youth, stands on two feet at his prime & needs a cane during old age – that cryptically also accords with the lunation, which begins with two days & two nights of crawling through the darkness of the underworld (on all fours) before ascending to its height as twin full moons & ending its life with a phase lasting a day & a half (comparable to a man with two legs plus half-a-man with one).

His life ends in blind exile, wandering through the underworld. His heirs to the throne (Polynices & Eteocles) agree to alternate reigns over Thebes (a ruler over each arc of the lunation) but his elder son Polynices reneges on the promise, leading to conflict & their ultimate death at each other's hands (both waxing & waning arc are extinguished together with the death of the lunation).

The seven focal phases likewise die with the demise of the lunation – known in the myth as the siege of the Seven against Thebes – yet when their heirs (the Epigoni) renew the siege a generation later, they finally succeed in retaking the city (seven new focal phases ruling over the successive new lunation).

Antigone, elder daughter (& half-sister) of Œdipus – who had accompanied her father in his blind wanderings through the underworld before he died – ignored her uncle's injunction against burying his corpse, which resulted in her own interment & slow death in a cave (underworld goddesses never permitted into the light of day). It bears adding that her sister, Ismene (the second underworld goddess representing the second dark night of the lunation), echoes the name of her Egyptian counterpart, Isis – the final syllable of her name, 'mene' signifying "moon" (*cf,* 'men-horæ' as "moon-priestesses" in *The Woman's Encyclopedia of Myths & Secrets* by Barbara Walker, p804).

"In the 19th century, the age preceding the psychoanalytical treatment of folklore, it was the vogue to explain all kinds of material of mythological or legendary character as invariably symbolizing the daily and yearly movement of the sun and other seasonal changes. Actually one can trace the prevalent solar explanation of myths to the Latin author of the fourth century of the present era, Macrobius. Friedrich August Wolf (1759–1824), a close friend of Gœthe, evolved the theory that the legends and myths of classical Greece and Rome had their origin, not in real events, but in the phenomena of nature. This theory found a considerable following and was further developed by Max Mueller, the scholarly author of numerous works on Hindu lore. The solar explanation was by far the predominant one, and the variety of other natural phenomena was ignored. This method was applied to the legend of Œdipus: 'Œdipus murders his father, weds his mother, and dies a blind old man. The solar hero murders the father who begot him, the darkness; he shares his bed with his mother, the sunset glow from whose womb in the morning dawn he did arise; he dies blinded: the sun goes down' [Immanuel Velikovsky, *Œdipus & Akhnaton,* 1960: Doubleday, p29]*."*

The solar explanation of the Œdipus myth, however, ignores: his lameness; the significance in producing two daughters & two sons; his sons' dispute over the throne; & the solution to the riddle of the Sphinx. The lunar explanation likewise explains salient features in other myths, ignored by the prevailing solar thesis. Which for example, identifies numerous Egyptian deities as solar gods, including Ra, Amon, Horus & Ptah together with Khepri (rising), Atum (setting) & the Aten (overall) – though scholars accept that Khepri was a manifestation of Ra & that Atum was the primordial deity responsible for the creation of all gods.

Nothing natural, however, distinguishes the sun in its daily course (which might invite identifying it separately with different times of day) while the lunation with its different daily faces, is tailor-made for distinct phase names.

HELLENIC MYTH 2: Cattle of the 'Sun'

That Archimedes was conversant with the ancient lunar insights may be further illustrated by 'his' celebrated puzzle of the Cattle of the 'Sun' (as explicit a calendrical reference as one might entertain; their milk directing the attentive reckoner to lunar measures). Modern mathematicians who claim solutions, have all misunderstood the nature of the problem, ignoring the riddle implicit in the four different-coloured herds (white, black, dappled & yellow).

The problem was discovered by librarian Gotthold Ephraim Lessing in a Greek manuscript containing a poem of 44 lines (22 elegiac couplets), in the Herzog August Library in which he worked in Wolfenbüttel, Northern Germany in 1773.

"If thou art diligent and wise, O stranger, compute the number of cattle of the Sun, who once upon a time grazed on the fields of the Thrinacian isle of Sicily, divided into four herds of different colours, one milk white, another a glossy black, a third yellow and the last dappled. In each herd were bulls, mighty in number according to these proportions: Understand, stranger, that the white bulls were equal to a half and a third of the black together with the whole of the yellow, while the black were equal to the fourth part of the dappled and a fifth, together with, once more, the whole of the yellow. Observe further that the remaining bulls, the dappled, were equal to a sixth part of the white and a seventh, together with all of the yellow. These were the proportions of the cows: The white were precisely equal to the third part and a fourth of the whole herd of the black; while the black were equal to the fourth part once more of the dappled and with it a fifth part, when all, including the bulls, went to pasture together. Now the dappled in four parts were equal in number to a fifth part and a sixth of the yellow herd. Finally the yellow were in number equal to a sixth part and a seventh of the white herd. If thou canst accurately tell, O stranger, the number of cattle of the Sun, giving separately the number of well-fed bulls and again the number of females according to each colour, thou wouldst not be called unskilled or ignorant of numbers, but not yet shalt thou be numbered among the wise.

But come, understand also all these conditions regarding the cattle of the Sun. When the white bulls mingled their number with the black, they stood firm, equal in depth and breadth, and the plains of Thrinacia, stretching far in all ways, were filled with their multitude. Again, when the yellow and the dappled bulls were gathered into one herd they stood in such a manner that their number, beginning from one, grew slowly greater till it completed a triangular figure, there being no bulls of other colours in their midst nor none of them lacking. If thou art able, O stranger, to find out all these things and gather them together in your mind, giving all the relations, thou shalt depart crowned with glory and knowing that thou hast been adjudged perfect in this species of wisdom [Ivor Thomas translation]."

[Represented differently by Heinrich Dörrie in his book *100 Great Problems of Elementary Mathematics: Their History & Solution* translated by David Antin (from the first 30 lines of the Greek poem):
"The sun god had a herd of cattle consisting of bulls and cows, one part of which was white, a second black, a third spotted, and a fourth brown.
Among the bulls, the number of white ones was one half plus one third the number of the black greater than the brown; the number of the black, one quarter plus one fifth the number of the spotted greater than the brown; the number of the spotted, one sixth plus one seventh the number of the white greater than the brown.
Among the cows, the number of white ones was one third plus one quarter of the total black cattle; the number of the black, one quarter plus one fifth the total of the spotted cattle; the number of the spotted, one fifth plus one sixth the total of the brown cattle; the number of the brown, one sixth plus one seventh the total of the white cattle.
What was the composition of the herd?"]

The three equations for determining the size of the bull herds, for example, have led to computations of 2226 white, 1602 black, & 1580 dappled, bulls; which in turn demand a herd of 891 yellow bulls. Yet those who fail to recognize that the colours accord with idiosyncratic lunar measures, miss the essential significance in these sums.

	Bulls	Cows	Total
White	12,915	9,345	22,260
Black	8,910	7,110	16,020
Yellow	2,020	6,890	08,910
Spotted	12,533	3,267	15,800
Total			62,990 [Keith Gordon Calkins]

The white bulls represent the seven focal visible phases in the lunation (22,260 ÷ 7 = 3,180); the black, the two nights without a moon in the sky (16,020 ÷ 2 = 8,010); while the dappled bulls refer to the twenty remaining unidentifiable spectres (15,800 ÷ 20 = 790); the three together accumulating the cycle's 29 integral phases (in the sum of their divisors).

The last 14 lines of the poem claim that the white & black bulls together form a square & that the yellow & spotted bulls together form a triangle.

Thus, as the puzzle demands, the sum of the white & black bulls indeed produces a square number (7 + 2 = 9); not the rectangle substituted by some to strain solutions.

The yellow bulls apart obviously represent a solar measure (the lack of an equation further intimating an encompassing sum); 8,910 cleverly concealing a signal great-year compound ('9 × 99', a mathematical distillate of '99 lunations', epitomized in the delimiting lunar Ennead of 'the nine focal phases'). The prevailing variable-month lunisolar calendar (employed by the Greeks & Israelites) observed an extended cycle of eight years comprising 99 months.

Thus, as the puzzle further stipulates, the sum of the dappled & yellow bulls constitutes a triangular number (20 + 8 = 28); the solar coefficient categorically characterized, as might be expected, in years. (Predictably, the second part of the problem requiring multiplication of the herds by the prime number 4,657, manages to preserve their respective divisibility.)

Although Thrinacia (the three-cornered isle harbouring the legendary Cattle of the 'Sun') is identified by literalists with Sicily, it bears reflecting that the visible portion of the lunation (27 spectres among the 29 phases) figuratively emerges as an 'island' in the celestial sea (because the two dark days remain submerged in its depths). An 'island' bounded on three corners by the opposing crescents & full moon (the most, & least, submerged spectres).

E | PREHISTORIC MYTHS

PREHISTORIC MYTH 1: PALÆOLITHIC BAS-RELIEF Venus of Laussel (23,000 BC)

Found in 1911 in the Dordogne region of France, the Venus of Laussel holds a crescent incised with thirteen marks, aloft in her right hand. The prevailing consensus among archæologists & anthropologists identifies her horn as a paradigm of phallic force & fertility; while others see in it a drinking horn proffering a sacred libation to the gods – possibly menstrual blood.

As a composition of lunar measure, however, the horn is recognizable as a depiction of the crescent moon. Waxing crescent of the lunation resembles the crux of the right arm (while waning crescent is simulated by curving the left). In general the full moon occurs twelve days after the crescent.

Which renders the figure a sculptural representation of the lunar goddess as earth mother goddess (because the visible phases of the lunation emerge on the horizon from the underworld). She holds a symbol of the waxing arc of lunation aloft to emphasize that at its height, full moon appears.

The crescent in the right hand of the Venus of Laussel bears 13 incised strokes, which accords with the waxing arc of the lunation (comprising 13 visible phases from crescent on the third night, to full moon on the 15th). It's natural, moreover, to associate this arc with the right side because the curved right arm when raised resembles waxing crescent (its initial spectre). Her left hand rests on her belly to show that she's given birth to these 13 phases, which grow from a tiny crescent to full term in the ultimate spectre (full moon raising the spectre of a full belly). It's hardly controversial to interpret 'the hand' in general as a symbol of 'measure'.

Until Procreation was understood, birth was held to be magical (the ancients reportedly believing that Conception ensued when the menstruating woman caught sight of the full moon). Early man considered the moon the dominant celestial deity because it presided over him at his most vulnerable (in sleep) while further presenting a different face each night, dispensing greater insight than the more predictable movements of the sun, stars or planets.

The phases of the waning arc of the lunation, in contrast, proceed to shrivel away night by night, characterizing the fruit of decay rather than birth. These phases may have been perceived by ancient man as the goddess's original thirteen phases being eaten away by an underworld serpent.

In a lunar light, the serpent in the Garden of Eden entices Eve to taste the forbidden fruit of the 'Tree of Knowledge of Good & Evil' because the enigma of rationalizing lunar & solar cycles involves the waning or serpent arc of the lunation – the arc initiated by the Egyptian god Set or Satan – where the terminal phase of the entire cycle (waning crescent) falls in one month on the 29th day & in the next on the 30th.

PREHISTORIC MYTH 2: LASCAUX MEASURES A Review of the Symbolism of Palæolithic Parietal Figures

The cave at Lascaux surveying the Vézère valley near the town of Montignac in France, has presented archæologists since its discovery on 12 September 1940, with a trove of insights into the mind of Palæolithic man. The walls & ceiling of the cavern are illustrated with 1963 inventoried figures, including 915 fauna & 434 geometrical designs* – most, in an exceptional state of preservation.

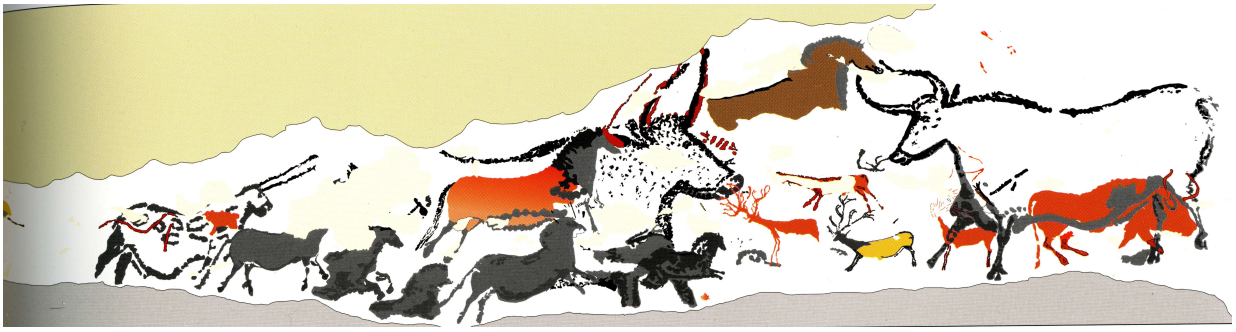
* Norbert Aujoulat, *Lascaux: Movement, Space, & Time* (2005: Abrams, p64; sketch p67).

The experts have long assumed such art to be ritual, intended, at least in part, to propitiate the god(s) & ensure success in the hunt. Others have suggested that the figures are totemic, & that the geometrical designs may have afforded refuge for departed – or 'traps' for malign – spirits. Viewed as sanctuaries or primitive temples, *grottes* such as Lascaux – the decorated caves, as opposed to the overhangs or *abris,* showing little sign of habitation – also lend to the theory that they may have been conceived to foster fertility.* Yet nowhere in the literature has the suggestion been advanced that the art might possibly preserve measures.

* Annette Laming, *Lascaux: Paintings & Engravings* (1959: Penguin, pp155–73).

Two of the focal tableaux at Lascaux illustrate this thesis well – the introductory scene in the Hall of the Bulls, & the terminal Shaft Scene – both expanding calendrical tallies.

Each species of animal represents a different measure: the bull signifying 'half-lunation' – its horns embracing both the crescent at the terminus of either waxing or waning arc (one horn alone), & the full moon at the apex of each arc (both horns together); while the horses denote elapsed nights; & the tines of the stag antlers, an aggregate of crescentine phases. This accounts for the deliberate superposition of the horses over bulls in the frieze.



The first two figures in the Hall of the Bulls introduce the two dark nights when no moon appears in the sky: the uncompleted horse [not shown here] – appropriately facing away from the row of adjacent creatures – alluding to the vanishing earlier lunation; with the second figure's body unfilled to denote absence of the moon from the sky during the two dark nights. This is accentuated by the two oblique lines extending from the brow of the second animal – identified by some as a unicorn – the strokes, just above the creature's eye, clearly projecting sightlines (with no crescent-like horns in view: *ie,* no phase detectable on high).

A progression of six black horses extends from the unicorn to the centre of the frieze – their number together with the duplex measure of the unicorn, projecting a count of eight nights. It is notable that computer enhancement* has isolated the outlines of two horses within the body of the unicorn, confirming that it was conceived as an aggregate of two component measures. The line of (eight) horses leads to the pivotal central figure of a two-tone horse – the highest image in the composition – its lower quarters conspicuously absent (*ie,* only half of it visible).

* Aujoulat, *op cit,* pp78–80.

This central horse, with a black head & red torso, represents the waxing half-moon which appears on the ninth night of the lunation – half the moon visible on high (black), the other half submerged in the underworld (red). Its muzzle is appropriately nestled between the horns of the waxing bull figure – half-moon occurring midway between waxing crescent & first full moon.

Flanking the centre of the frieze, two great bulls confront one another: the opposing halves of lunation. The right-hand bull is identifiable as the symbol of the waxing arc by: [a] white horns – denoting increasing brightness; [b] the outer horn – assuming the form of the waxing crescent – twisted tip up to emphasize ascent; & [c] the presence of a penis – a symbol naturally associated with rising. It bears noting that Neolithic cultures much later on, also consigned the waxing arc of the lunation to the right side in their iconography – presumably because the right arm conforms to the waxing crescent when articulated (Ↄ).*

* Nick Drumbolis, *God's Shadow: A Chronological Supplement of Sample Figures Illustrating a Continuous Tradition of Covert Lunar Notation* (2004: Letters, Toronto).

The left-hand bull may be recognized as the waning figure by: [a] the filled black horns – denoting increasing darkness; [b] the relative shortness of the outer horn – assuming the orientation of waning crescent; & [c] the red outline of the horns associating it with death both through blood & the red ochre employed in burials of the dead. Both bulls are uncoloured, or visible only in outline – like the unicorn – because 'they' don't actually appear discrete in the sky, representing instead an aggregate of visible phases from crescent to full moon (explaining the spotted coats).

Additionally, a sequence of red marks projecting from the waning bull's field of vision appears to comprise some 14 or 15 dots: the number of phases in the waning arc of the lunation – from day 16 in the cycle when the second full moon appears, to day 30 at its end – amounting to 14 or 15 phases.

A second bichrome horse, superimposed on the body of the great waning bull, may be identified as the waning half-moon by: [a] its two-tone colour; [b] the clear presence of two heads – one (black) beneath another (red with black forehead)* – the waning half-moon surmounting its waxing counterpart which has fallen; & [c] a line of six black dots at the base of the mane – tallying the phases completing the lunation (from night 23 to night 29). This horse's legs have been included to indicate the inclination of the waning arc 'to ground' – entrance to the underworld.

* Aujoulat, *op cit,* p80.

The five stags between the great bulls were apparently added after the mural was completed, to judge from the decline in style & the superimposed lines; but the two with preserved antlers may be cited to support the iconography of the bulls, both in their colouring & the presence of the penis on the darker stag. Some uncertainty over the number of tines on their antlers renders my contention that the points appear to accumulate the phases of a lunation, somewhat inconclusive (the presence of the other stags demonstrating, in my view, that the model was tested at least twice & perhaps over three successive lunations, to compare results). Ignoring the tiniest hairlike tips, the red stag appears to support a crown of 16 tines – although the count has risen as high as 22 – while the black boasts 14 (the dark nights fittingly accounted part of the waning underworld arc): their combination accordingly delimiting the lunar interval [16 + 14 = 30].

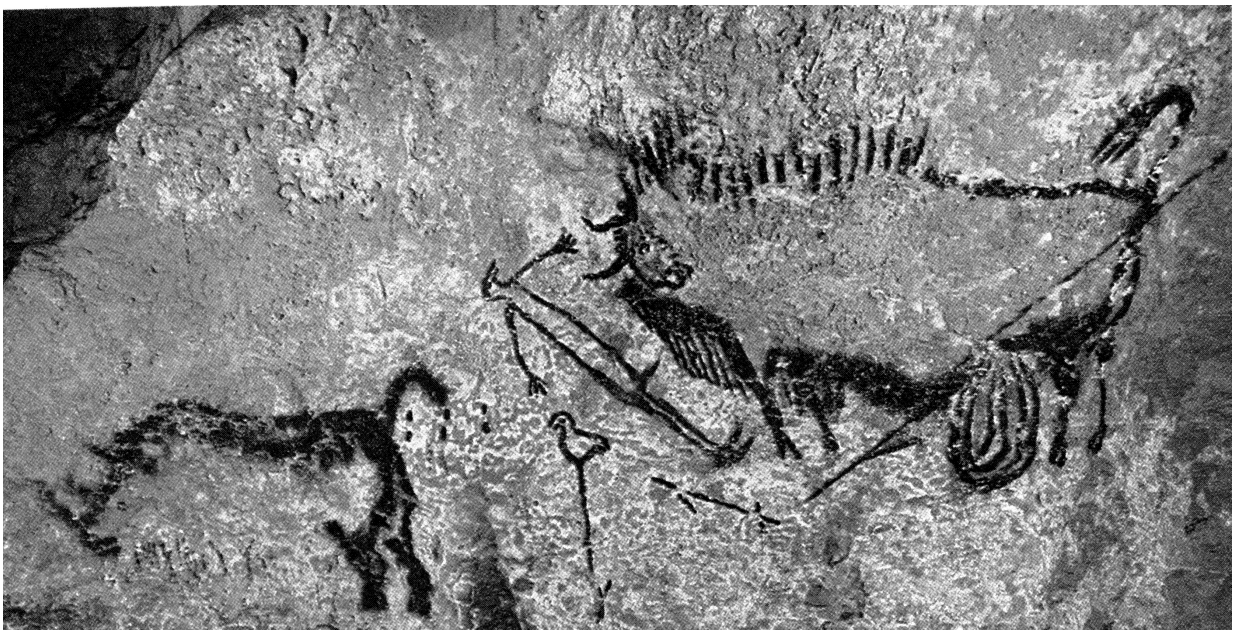
Two other bovids – presumably cows – complete the panel: the red figure beneath the waxing bull conceivably representing the daytime or underworld aspect of the waxing arc (when the sun has replaced

the moon in the sky). The arcs of lunation were thus conceived to include 14 nighttime spectres mated to 14 daytime aspects (excluding the two dark nights). The damage to the other bovid – painted over the torso of the waning bull – precludes analysis; although it bears noting that the surviving fragments retain traces of red pigment both on the crown of the skull & about the muzzle (lending arguably to its correlative role as mate for the waning bull).

Entertaining my thesis, this Introductory Frieze preserves more measures of lunation than may be attributable to coincidence: [a] the two dark nights between lunations; [b] its division into waxing & waning arcs; [c] the number of phases in each arc; [d] the number of nights to waxing half-moon; & [e] the number of nights from waning half-moon to waning crescent.

PREHISTORIC MYTH 3: LASCAUX MEASURES: Shaft Scene

The shaft scene at Lascaux – secreted from view in a pit 16 feet beneath the floor of the Great Fissure* – complements the putative symbolism of the Introductory Frieze in the Great Hall of the Bulls.
* Annette Laming, *Lascaux: Paintings & Engravings* (1959: Penguin, p94).



The bison's tail – describing a waxing crescent – incorporates three fringe counts to signify the appearance of the new crescent on the third night of the cycle. Proceeding left along its back (*ie,* counter-clockwise – as the figurative lunation was conceived to advance: from waxing crescent on the right to waning crescent on the left) are 22 hackles between tail & head, with 3 more on the forehead between the horns: completing a count of 30 phases with the horns [3 + 22 + 3 + 2 = 30].

The three strokes between the horns, mirroring the fringe of the tail, represent the twin full moons (nights fifteen & sixteen of the cycle) plus the first waning phase (night seventeen) which is frequently confused with the full moon – the last of the strokes accordingly declining, to indicate the start of the waning arc.

Fourteen marks radiate from the underside of the bison – the number of nights from the second full moon (night sixteen) to the waning crescent (night thirty). It bears noting that the tucked & rounded head describes a circle – the 'fringe of the underside' depending beyond the head precisely as the waning phases succeed the appearance of the second full moon.

The underbelly (which has otherwise been interpreted as an evisceration or disembowellment)* appears to exhibit a vulva: the subterranean orifice, or cave, from which the lunar goddess, or moon, was presumed to emerge – the deity further credited with magically inducing birth.† This reproductive cavity is segmented from the bison's torso by the so-called spear, in part, to isolate the concept of lunar generation: *ie,* the cycle of lunation advancing from the bowels of the underworld (the mouth of the cave).

* Laming, *op cit,* p95.

† Nick Drumbolis, *God's Wand: The Origin of the Alphabet* (2002: Letters, Toronto, pp17–21).

The line of the so-called spear is directed beneath the beast to another directional glyph – comprising six lines – aimed at the bird on a stick, & ultimately at the tail of the rhino.

A birdman above the glyph describes a compositional oblique, lending to the suspicion that he may represent the half-moon – whose diameter is inclined to the same oblique – the line of the so-called spear through the hind quarters of the bison further simulating the opposing oblique: the lunation figure quartered.

Birdman's penis is erect to signify rising half-moon; while his counterpart's stick-perch delineates the telltale stroke of downfall, identifying the waning half-moon. The putative 'half-moon bird figures' are accordingly faced in opposite directions. Birds were naturally associated with those phases of the lunation which resemble the outstretched wings of a soaring figure – the gibbous phases between waxing & waning half-moons conversely exceeding the outline – half-moons embodying the culmination or apex of the bird-quarter phases (crescent to half-moon).

Birdman's left hand with four fingers gestures to the bison's right horn (with tip turned up to identify it as waxing crescent). This signifies that the addition of Birdman's counts (eight fingers in all) to the two moonless nights preceding waxing crescent – symbolized by the two spokes of Birdman's beak, which recollect the strokes from the unicorn's forehead in the Introductory Bull Frieze – brings us to the tenth night & the phase of waxing half-moon (embodied by the Birdman).

This disparity with the number of nights to waxing half-moon in the Introductory Frieze, may be explained by the notoriously variable interval between waxing crescent & half-moon,* as well as by the arguable presence of a putative seventh incomplete horse figure† to the right of the line of horses in the Hall of Bulls.

* the shortest interval between waxing crescent & half-moon for the year 1994, as an example, amounted to 160 hours 39 minutes, while the greatest interval was 197 hours 9 minutes – a problematic disparity for the ancient observer of no less than 36½ hours, or better than a day & a half [Nick Drumbolis, *Myth as Math: Calendrical Significance in the Mosaic Census of the Sons of Israæl,* 2007: Letters, Toronto, p101: n274].

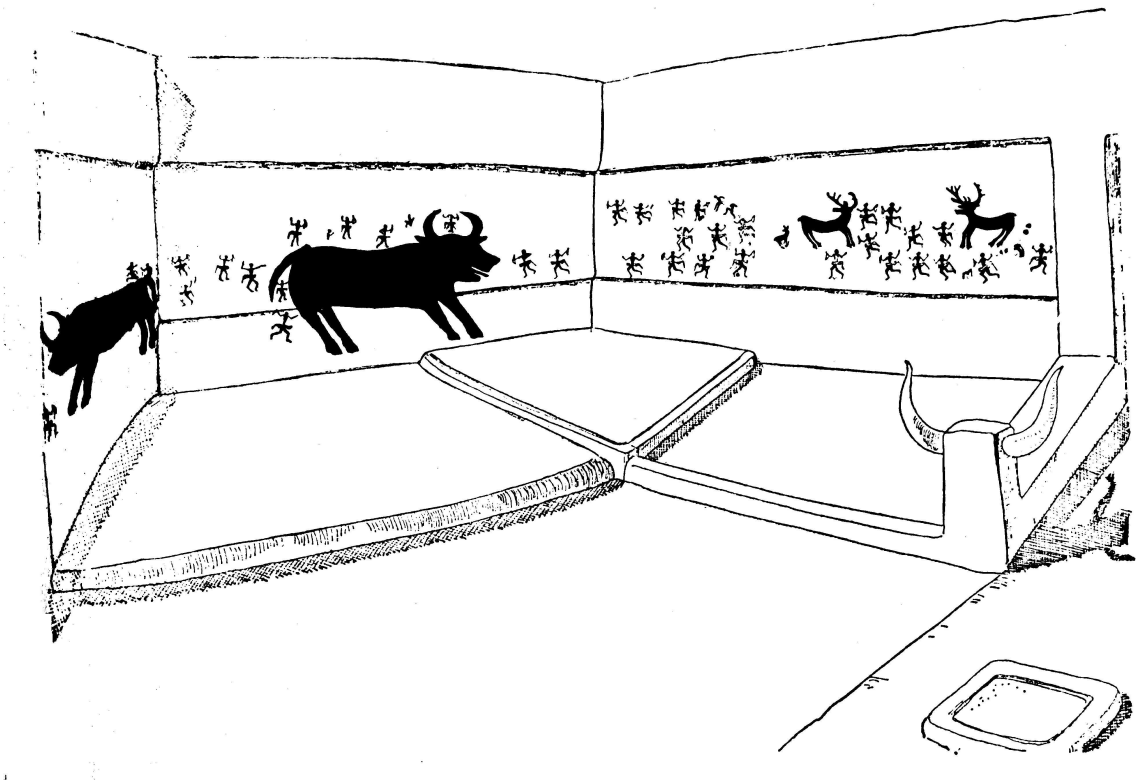
† Norbert Aujoulat, *Lascaux: Movement, Space, & Time* (2005: Abrams, New York, p80).

Likewise six nights after the waning half-moon – the six rhino 'excretions' – waning crescent appears (depicted in rhino's tail). The rhino is only partially drawn – fading into the underworld – to represent the end of a cycle (his two horns figuring the two dark nights until the succeeding lunation is rendered visible).

It struck me early on in my study of Palæolithic art, that the heirs of the pioneering lunar surveyors may have deliberately advanced from cumbrous incisions on bones & cave walls (requiring exacting labour to compare with future counts)* to the radical distillate of iconic intervals. Somewhere they kept a control database of their catalogue of figures, each distinguished presumably with characteristic counts (either with dapples or as in the example of the Shaft Scene bison, numerated fringe). Control measures which would conceivably have been secreted in the most inaccessible places underground as a backup of their deciphering keys, for insurance – Lascaux cave, in my estimation, a focal decoder preserve.

* Alexander Marshack, *The Roots of Civilization: The Cognitive Beginnings of Man's First Art, Symbol & Notation* (1972: McGraw-Hill, vp).

PREHISTORIC MYTH 4A: ÇATAL HÖYÜK Bull-Hunt Mural



Entertaining the hypothesis that the inhabitants of Çatalhöyük possibly modelled their iconography on the lunar cycle, the sketch of a previously identified "shrine-room" – reproduced on page 31 of *The Archæology of Mesopotamia* by Seton Lloyd, 1978 – illustrates how uniformly its details conform to the complexities of lunar measure.

The 'bull-hunt mural' extends, appropriately, across three panels. The first panel shows a bull facing left, with a scorpion-man confronting it head-on & two more at its tail. This represents the old lunation which has passed, followed by three days & two nights of darkness before the new lunation emerges. The bull faces left because waning crescent – epitomizing the lapsed lunation, as its terminal phase – resembles the raised left arm when curved.

In effect, the three scorpion-men are attempting to 'turn' the bull, because when the waxing crescent of the new lunation emerges on the third night, it will face in the opposite direction to that of the waning crescent of the preceding lunation. The bull's tail thereby assumes the appropriate shape & orientation of

the waxing crescent of a new lunation, whose 'delayed visibility' is emphasized by the third scorpion-man touching it – highlighting 'the third day of the cycle' when waxing crescent finally emerges. He is also alone among the three, facing in the bull's direction. His touch implies that the new lunation has at last become palpable, after two dark nights without a phase on high.

The second panel shows a bull facing right – in accordance with the 'direction' of the new lunation, whose initial phase (waxing crescent) resembles the right arm curved – with 14 scorpion-men surrounding it. This panel represents the waxing arc of the new lunation, which comprises 14 visible phases from crescent (on night 3) to second full moon (on night 16). The right bull's open mouth signifies that it is 'active', unlike the left.

The six scorpion-men behind the second bull represent the six additional concave phases (beyond waxing crescent) comprising the concave quarter of the waxing arc, which terminates with waxing half-moon (on night 9). They are lower than the bull's back, to signify that concave phases don't 'rise high enough' (*think* 'dough') to exceed the line of bisection conspicuous in the half-moon (dividing the 'head' of the arc from its 'foot').

The six scorpion-men atop the bull represent the number of convex phases 'back' of, or preceding first full moon (which rises on night 15). Thus the twelfth scorpion-man on the central panel rests between the bull's horns, which together trace the outline of a circle simulating full moon. The twelve scorpion-men behind the bull's front horn (on the central panel), together with the three on the first panel, produce the correct sum of 15 markers to accord with the first appearance of full moon (on the 15th night).

The two scorpion-men at the bull's mouth represent the second full moon & first waning phase (on the 16th & 17th nights respectively). Accordingly, the scorpion-man nearest to the bull's head (because he's the last phase to 'commune' with the 'active' bull) is the only one on the panel whose bow is drawn – the 17th or first waning phase here characterized as executing the downfall of the lunation, with his arrow. Bows held aloft or aside in the hands of the others on the panel, in contrast, symbolize 'the bow of the sky' (a semicircle) traversed by each lunar phase in turn.

The third panel includes 13 scorpion-men in accordance with the remaining phases in the waning arc of the cycle. The bull is now absent because it has been shot – the 13 terminal phases represent its increasing nightly decay (until it completely disappears). These waning phases have been segregated on a separate panel because the lunation has turned again (in falling) – the direction of the panel thereby indicating 'waning arc' (in parallel with the first panel which also represented a dying or departed lunation).

The sum of scorpion-men across the three panels amounts to 30, in conformity with the number of phases in the lunation.

A complementary vignette which accompanies this 'waning segment' of the lunation mural, involves two facing deer with a fawn to their left, surrounded by 12 scorpion-men. This is a depiction of the 12.37 lunations in a solar year, with deer the embodiment of aggregate lunations (the tines of their antlers

collecting cumulate phases). 'Facing deer' convey the impression of annual waxing & waning sequences, or solar-cycle 'arcs' (in this case, divided into eight seasonable or summery, & four unseasonable or wintry, moons).

All three deer are looking back toward the 'waning segment' of the preceding lunation mural, to invite association of the two scenes. While all but one of the scorpion-men in the deer scene likewise face it – the lone exception appearing to make his way off the panel, to emphasize the *recurrent* aspect of complementary lunar compositions. In other words, the depictions of lunar & solar measure both encode *repeating* cycles.

The 'lunisolar vignette' is conjoined with the *waning* scene because the annual calendar was conceived to reside in the *underworld* realm of departed lunations. Its measure was clearly not an empirical one observable on high, but rather computational relying on a record of aggregate observations (a submerged or interred sum of departed lunations).

The scorpion-man (like the Myrmidon), symbolizes both the 'computational' aspect of the mural (by employing 'men' rather than animals), & the apparently fatal proclivity of every lunar phase, which ends interred in the underworld following its night on high – like the nocturnal scorpion hiding in its hole by day. The scorpion's tail, which resembles lunar crescent when raised (at night while foraging), depends downward when receding into its day-long burrow (to escape the sun). And the erections of the apparently 'aroused' scorpion-men merely allegorize the 'rising' of lunar phases up into the sky.

The scorpion-men identify the mural as a paradigm, rather than measures specific to a certain month in history, through their scorpion association with the underworld – in which the vault or repository of accumulated observations was conceptually situated.

While I realize that a stylized sketch of a faded mural may not be entirely dependable, it conforms as it is, to far too many complexities & idiosyncracies of lunar cycle to attribute to sheer coincidence, or synthetic projection. Many comparable examples of lunar convergence treated in my books, support the model's widespread use throughout antiquity (including previously unsolved ancient mathematical puzzles consistently resolved through lunar measure; *see* V10 below, *The Lunar Basis of Myth & Symbol,* pp35–59). Which intimates that a lunar review of other art at Çatalhöyük (& elsewhere) may not only prove insightful but ultimately indispensable.

PREHISTORIC MYTH 4B: ÇATAL HÖYÜK Ancient Nightly Lunar Phase Count through 29.5 Days
incorporating 7 empirically distinguishable, & 20 indistinguishable, visible phases

1–2 (distinguishable on sight)	2 dark nights with no moon visible (counted as 3 days plus 2 nights)
3 (distinguishable)	WAXING CRESCENT
4–8	5 intermediate indistinguishable concave waxing phases
9 (distinguishable)	WAXING HALF-MOON
10–14	5 intermediate indistinguishable convex waxing phases
15 (distinguishable)	FIRST FULL MOON

16 (distinguishable)	SECOND FULL MOON
17 (distinguishable)	FIRST WANING PHASE
18–22	5 intermediate indistinguishable convex waning phases
23 (distinguishable)	WANING HALF-MOON
24–28	5 intermediate indistinguishable concave waning phases
29 (distinguishable)	WANING CRESCENT

Greater detail is provided in *The Lunar Basis of Myth & Symbol* (pp8–11).

Note that the modern division of lunar cycle – into four principal & four intermediate phases – represents an astronomical rather than an empirical construct, with the two gibbous points in the cycle established mathematically. Further, the ancient empirical measure of two apparent full moons & two dark nights in a single lunation, which seem to contradict the astronomical evidence, are in fact confirmed by the duration of the respective intervals of 'darkness' & 'full light'.

PREHISTORIC MYTH 4C: ÇATAL HÖYÜK The Leopard Puzzle

With regard to the 'puzzle of the leopard' at Çatalhöyük – leopards being apparently focal to the symbolism, yet with a puzzling absence of their remains in situ – solutions appear to have been sought primarily on the premise that the iconography reflects behaviour.

While conventionally regarded as 'naturalistically representative', animal symbolism may also be 'allegorically representative' (adding another degree of abstraction: an animal image representing 'something', in reference to 'something else'). While the behavioural fact that 'leopards climb trees' can be shown to have been significant in the employment of the large cat as an appropriate referent, the evidence reveals that it was its 'spots' which comprised the essential association (*see* Section IV: D).

To interpret figures in an allegorical context, one must first identify that hypothetical 'something else' (or model) which the figures refer to. And a previously untested model which effectively accommodates the complexity of ancient iconography, arises in the lunar cycle.

In light of the fact that a satisfactory solution to the leopard problem has yet to emerge, those open to untested hypotheses will also find that 'lunar measure' consistently resolves an unexpected number of contingent questions in addition to the puzzle at hand – increasing the plausibility of an allegorical lunar solution.

An impediment to scholarly consideration of this 'metrical' (in contrast to a 'ritual') solution, has long been the generally unrecognized 'catalogue of disparate lunar measures' comprising a lunar cycle – each hypothetically requiring a distinct symbol.

Modern astronomers, for instance, perpetuate the offhand belief that a grasp of lunar cycle presented little difficulty for ancient observers. Yet this is neither borne out by the evidence, nor certainly the complexity involved in understanding lunar motion (which was only achieved for the first time in 1919 – Ernest Brown's historic equations of lunar mechanics involving a sobering 1500 variables).

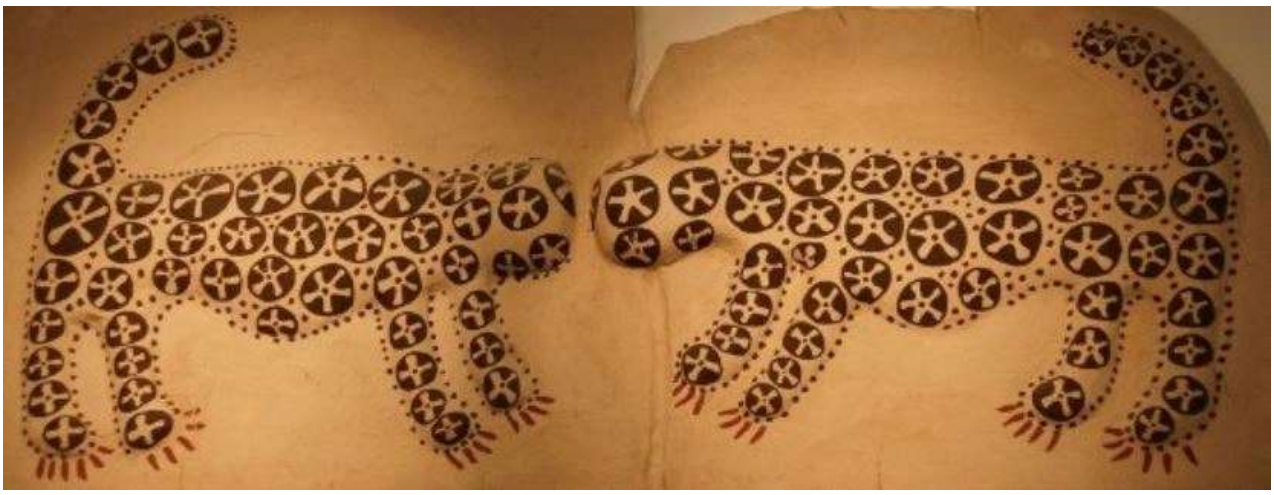
Below is a table of these lunar distinctions, incorporating a parallel 'lexicon of figures' which represented them: figurative associations which consistently clarify otherwise enigmatic ancient texts & compositions (*see* Section IV).

It follows that if ancient observers were intent on preserving detailed figurative information about the lunar cycle for their heirs, it would be critical for each of these 'cycle distinctions' to retain its own proprietary figure or patent quality – distinct computational referents functioning like the familiar geometrical interface 'π' (which categorically codifies 'a mathematical measure' in reference to 'the geometrical relation between diameter & circumference of a circle'). While *superficially* incongruous, a comparison of the figure of the leopard (employed as a second-degree abstraction) with the symbol 'π', is implicit in the discovery which led to the hypothesis of 'animal figures as lunar referents': the previously undetected conformity between 'key letters of the Alphabet' (including π) & their equivalent 'phase-forms' & order in the lunar cycle.

Briefly, key characters in the putative original Alphabet both trace the shape of, & fall in the same place in their sequence as, focal phases of the moon: *eg,* our third letter 'C' (*gimel, gamma*) resembles waxing crescent which appears on the third night of the lunation; the ninth letter *teth* or *theta* resembles the half-moon which falls on the ninth night; & the 15th letter O (*omicron, ayin*) accords with the full moon which appears on the 15th night; *etc.* A succinct outline of this discovery is freely accessible at Internet Archive: [https://archive.org/details/TheLunarBasisOfMythAndSymbol].

As the outline shows, such animal symbols – which recur throughout numerous cultures across an untold expanse of time – consistently (& predictably) unlock apparently unrelated mysteries, when interpreted as lunar measures. As my elucidation of the so-called 'bull-hunt mural' at Çatalhöyük illustrates, a detailed understanding of lunar cycle allows one to recognize that the unexpected conformity of so many compositions to 'lunar measure', cannot have been accidental.

Or, in other words, it would appear that a previously unsuspected allegorical 'lexicon of lunar figures' underpins prehistoric culture – providing the key to an unexamined trove of ancient observations.



PREHISTORIC MYTH 4D: ÇATAL HÖYÜK Ancient Lunar Iconography (with explanations appended)

[A] complete lunation (nights 1–29)	goddess; plumed serpent
[B] cardinal lunation (aggregated)	deer (herding)
[C] visible lunation (3–29)	bull (forward horns)
[D] lunar arcs (1–15) (16–29)	cat (spotted: 3–29); (black: 1–2)
[E] lunar quarters (1–9) (10–16) (17–22) (23–29)	horse
[F] distinguishable phases (3,9,15,16,17,23,29)	white (*aka* focal phases)
[G] indistinguishable phases	dappled
[H] waxing phases (3–16)	erect penis (signifying 'rising')
[J] waning phases (17–29)	red (blood, dying)
[K] concave waxing phases (3–9)	bird (white)
[L] concave waning phases (23–29)	vulture (dark with red head)
[M] convex phases (10–22)	turtle
[N] extinguished phases	headless man (with erection)
[O] crescents (3, 29)	boar (3); rhino (29)
[P] generative tetrad (29, 1, 2, 3)	ibex or goat (backward horns)
[Q] underworld phases (1–2)	twin goddesses
[R] dark interval (1–2)	trident (ideally inverted)
[S] island phases (3–29)	Thrinacia
[T] two islands (3–14) (17–29)	Dionysus [*dio,* "two"; *nísos,* "island"]
[U] extended 'great-year' cycles	giants
[V] intercalary days	sacrificial animals
[W] variable phase (29/30)	Adam's rib; Hades/Pluto

PREHISTORIC MYTH 4E: ÇATAL HÖYÜK Ancient Lunar Iconography Explained

[A] The complete lunation was represented by two different figures: the goddess, in the earlier period; & plumed serpent, later.

The goddess incorporated two dominant aspects: [1] as the embodiment of the two dark nights, she represented the earth-mother; & [2] as the lunar goddess she gave birth not only to the lunation but also each waxing phase. So-called Venus figurines represented her fecundity through corporal exaggeration: with pronounced buttocks representing the two dark nights; pendulous breasts as twin full moons ('milky' white); beaded head as her brood of male phases; or facelessness to signify her absence on high.

All phases of the visible portion of the lunation were considered male because the crescents resemble an erect penis, & phases rise into the sky like a penis when stimulated by the goddess.

The plumed serpent incorporated the prevailing characteristics of the opposing arcs of the cycle: waxing arc whose phases rise increasingly higher from the celestial sea (exhibiting more of the moon each night), which naturally epitomizes 'flight'; & waning arc whose phases grow progressively leaner by the night, as though being consumed by an underworld serpent (prefiguring interment, which intrudes into the serpent's lair).

The Mayan conception of *Quetzal-coatl* held the two conjoined; while the Egyptian correlative symbolized 'the opposing arcs' with distinct crowns – the white vulture crown of the *higher* Upper Nile, or *hedjet,* representing waxing arc (which gets whiter & higher by the night); & the red cobra crown of the *lower* Delta, or *deshret,* waning arc (reflecting the figurative blood of the dying or interred lunation).

[B] Deer represented cardinal lunations (*think* 'sums'). Antlers incorporate a sum of phases from a single lunation, waxing on one side & waning on the other. Herded & coupled, deer signified aggregate lunations (*cf, Lascaux Measures:* V1 below, pp2–5).

[C] The bull, as noted, represented the visible portion of the cycle (nights 3 through 29). Its horns curve forward signifying an advancing measure. They further resemble the opposing crescents which open & close the visible cycle. And together they trace a circle, like full moon at the head of the cycle. The bull sustains this iconography from Lascaux (as shown in my paper below, V1) to 'the abduction of Europa' & beyond – Zeus adopting the form of a white bull with a black patch between its horns to seduce the princess (white like the moon, black like the two dark nights separating the crescents).

[D] Large cats facing one another (with telltale crescentine tails) represented the lunar arcs, both because they climb trees & sport spots. The branches of a tree or bush adapt nicely as figurative phase 'offshoots' from the individual trunk or stem of a single lunar cycle (*cf,* the Burning Bush, with phases alight, yet their 'fire' mysteriously never consumes the plant). Initially the large cat was spotted, representing the accumulated phases in each opposing arc. The Mayan jaguar (possibly like the leopards at Çatalhöyük & Tarquinia) also occasionally appears black, further reflecting the two comparably rare dark nights. Lion-gates perpetuate the significance of a portal into a lunar-governed confine or culture devoted to the calendrical refinement of celestial measure.

[E] The horse may initially have represented individual phases before symbolizing focal phases (*cf,* V1, *Lascaux Measures,* pp2–4), & ultimately lunar quarters (V10, pp26–9).

[F] White, the emblematic colour of lunar waxing – mounting milk of the progressively pregnant goddess (*see* Venus of Laussel: V10, pp 12 & 17) – later became proprietary to the seven empirically identifiable focal phases: opposing crescents, opposed half-moons, twin full moons & first waning phase (V10, p49).

[G] Empirically unidentifiable phases were characterized as leprous (Moses: Exodus 4:6); unclean 'animals' (Noah: V10, pp52/3); or dappled (*cf,* Archimedes' Cattle of Helios puzzle: V10, p49).

[H] An erection signified 'rising' as far back as the Shaft Scene at Lascaux (V1, pp 4 & 7).

[J] Red, the emblematic colour of blood, death & dying (*cf,* ochre), characterized the phases of the waning arc or their theophanies (*eg,* red-head Set).

[K] The bird represented concave phases, because its outstretched wings were no longer identifiable in the outline of more swollen convex phases. The white bird (*eg,* the dove in Genesis 8:6–12; *see* V10, p53) signified waxing concave phases. The birdman's erect penis at Lascaux depicted waxing half-moon, the terminal waxing 'bird' phase (V1, p7).

[L] The vulture embodied both waxing & waning concave phases, its dark feathers symbolizing night, with white-headed specimens associated with waxing phases, & red-headed ones with waning. The vulture, moreover, accommodated the crucial aspects of 'flight' & 'decay' which each lunar phase manifests.

[M] The turtle (on whose back the world was said to rest) resembles the 'great half-moon' outlining the crown of the 'lunation compass' (*see* V7, p20) composed of the convex phases (nights 10–22). The Hellenistic-Egyptian sobriquet, Hermes Trismegistus – held by Mediæval Neo-Platonists to have been the author of the *Corpus Hermeticum* & preceptor of a suspected *prisca theologia* – cleverly embodied the same 'great half-moon' (or great Thoth) in a remarkable transliteral rebus (V7, pp24/5).

[N] The headless man represented lapsed phases (*cf,* Gobekli; & the ten decapitated men on the Narmer Palette). The practice of skeletal decapitation presumably arose from this association, given that individual lunar phases clearly returned to life after *their* 'beheading' (possibly instilling hope that the practice would ensure the return or transcendence of the deceased as well, following comparable dismemberment).

[O] The boar with its menacing tusks, represented the crescents which, like the boar, were closest to the ground of all visible phases. Its notoriety for killing gods in ancient myth, generally during winter (*eg,* Tammuz, Adonis, Attis *et al*), accords with the death of the lunation at its 'coldest' ('least light' giving little heat). Its ferocity also accords with the avenging aspect of the waxing crescent in Egyptian myth – Horus (the theophany of waxing crescent) rising to avenge the death of his father Osiris (theophany of waning crescent) at the hands of his abominable uncle Set (first waning phase, blamed for the ultimate demise of the lunation, by initiating the waning arc). The Shaft Scene at Lascaux employed an image of a rhinoceros to represent waning crescent (V1, p7).

[P] The ibex introduced the generative tetrad (nights 29, 1, 2 & 3) with its backward-leaning horns implying "behind appearances" – as in 'the underworld' (during the dark nights between crescents). *See* V10, pp29/30 for a detailed explanation.

[Q] Twin goddesses personify the two dark nights (giving rise to the female figurines with two heads). Dogs rest beneath their throne tending the flock of departed phases. In Hellenic myth the 'twin' dogs, Orthrus & Cerberus, bear two & three heads respectively, in accordance with the three days & two nights of the dark interval (V10, p31). The underworld serpent – extrapolated from the serpentine path of the visible lunation through its monthly meander on high – represented 'renewal' both in the shedding of its old skin (or preceding lunation), & in early myths, as the captor of the mother goddess responsible for impregnating her with the new lunation, before devouring her.

[R] The trident likewise stood as a symbol of the dark interval, with its three tines & two spaces according with the three days (daylight epitomizing 'visibility', like concrete tines) & two dark nights (during which there is an absence of visible phases, reflected in the two spaces within the trident). It is ideally encountered inverted (*cf,* Gobekli) in the manner in which Poseidon strikes the earth to produce his floods. Poseidon, like Set, embodied the theophany of the first waning phase (thus ruler of the terrestrial sea which ultimately consumes the moon), precipitating the submergence of the lunation into the underworld. His trident presages this lunar confinement between visible cycles.

[S] The Homeric myth of Thrinacia alluded not to Sicily, but the lunation envisioned as a triangle in the celestial sea, with three prominent phases as its terminal vertices: both crescents & fullest moon (nights 3, 16 & 29). Needless to add, the two dark nights host the sole phases in the lunation which remain completely submerged. The only visible phases that never appear during daylight are the twin full moons which rise with the setting of the sun & set at its rise. All other visible phases frequently appear during the daytime, as though partially submerged in a celestial sea.

[T] Another Hellenic personification of 'lunar islands' occurs in the name of Dionysus, intimating "two islands" (δύο = *dio* + νησί = *nisi; cf,* Mela-nesia). The two islands, in this respect, arise from the

recognition that the opposing arcs, minus the full moons, comprise distinct outcroppings in the celestial sea. All the phases of the waxing arc (nights 3–14), like all those of its waning counterpart (17–29), appear partly submerged, save for the full moons which separate the island arcs.

[U] The giant, which emerges in the historical era, represented an extended 'great year' interval (his long hair intimating 'lengthy reckoning'). Measure of time in the Babylonian & Egyptian Empires relied on separate lunar & solar calendars, which had to be periodically rationalized over protracted intervals, with intercalary additions or subtractions. These extended intervals were symbolized by synthetic creatures.

The Phœnix interval, for example, occasioned the incineration or subtraction of a single day every 500 calendar years, from the Egyptian solar calendar of 365 days. This was required to bring their solar calendar back into line with the observational lunar measure of 309 lunations (or '25-year Apis cycle' comprising 9124.9516 days). Twenty-five Egyptian calendar years extended 9125 days, exceeding the '25-year Apis cycle' by .0484 days, a difference which accumulated an entire day after 20 Apis cycles (or 500 years). Thus the myth of the Egyptian 'bird', recorded by Herodotus, involves the death by fire & rebirth from ash, of the fabled Phœnix every 500 years (*ie,* the subtraction of a day from the 500th solar measure to facilitate its consequent realignment with the sacred lunar measure, thereby *reviving* the sacred Phœnix great-year cycle).

[V] Sacrificial animals represented intercalary days, required to periodically rationalize observational lunar measures with mathematical solar calendars. The focal basis of 'ancient time measure' was the lunar cycle, which appears to have been continuously observed & recorded as far back as the Palæolithic Period. The problem confronting ancient man arose from attempts to rationalize lunar measure with the solar cycle.

Over time, the concept of the 'great year' gave rise to numerous extended cycles, all of which required intercalary adjustment at their terminus. These include 3-year, 8-year, 11-year, 18.6-year, 19-year, 25-year, 49-year, 70-year, 76-year, 304-year, 350-year & 500-year measures, among others. The Egyptians considered the five days added to their 360-day solar measure as sacred or sacrificial days. These five days dedicated to five different deities were held to reside outside the calendar, 'a sacrifice of time' preceding the resumption of the successive 360-day cycle (comprising twelve 30-day months).

Deities were the embodiment or theophanies of lunar phases, while animals each represented a different lunar measure. With the revolutionary introduction of the first lunisolar calendar in history – the variable-month eight-year calendar, requiring the addition of only a single day every eight years – the need for 'animal sacrifice' was considerably reduced. The 'variable month' refers to alternate months of 29 & 30 days.

Increasingly, heirs to 'ancient traditions which invoked animal sacrifice' lost sight of the allegorical significance behind this injunction, unwittingly perpetuating mistakenly literal holocausts of helpless sheep & cows in propitiation to a misplaced deity.

[W] The introduction of the revolutionary variable-month calendar (with alternate months of 29 & 30 days) occasioned the need for a revision of the symbol for the terminal phase in the lunation, waning crescent. Adam represented the 29-day male month while Eve incorporated an extra rib (or crescent) comprising the 30-day female month. In Hellenic myth, Hades, theophany of waning crescent (personifying "the underworld"), acquired a secondary identity as Pluto (or "wealthy") in accumulating the extra measure. As waning crescent was the seventh of the focal phases, the epithet "resting on the seventh day" also accommodated the prospect of counting waning crescent twice, once as night 29 & subsequently as night 30.

F | AMERICAN MYTHS

MESOAMERICAN MYTH: Mayan Long-Count Deciphered

A review of the original verse which has sparked widespread expectations of a variety of cosmic conjunctions projected for 21 December 2012, reveals that the Long Count which it refers to, delimits a purely calendrical 'end-time' (not a cataclysm or galactic alignment). The seventh-century verse on 'Tortuguero Monument 6' from southern Tabasco, Mexico (reportedly the only recognized inscription preserving an explicit reference to B'ak'tun 13) reads:

> *"It will be completed the 13th b'ak'tun.*
> *It is 4 Ajaw 3 K'ank'in*
> *& it will happen a 'seeing' (?).*
> *It is the display of B'olon-Yokte'*
> *in a great 'investiture'."*

The translators have tentatively identified two of the three elements in the name of the putative god 'B'olon-Yokte' as "nine" & "god" (with 'ok-te' undeciphered). [Sven Gronemeyer & Barbara MacLeod, 'What Could Happen in 2012: A Re-Analysis of the 13-Bak'tun Prophecy on Tortuguero Monument 6.' 2010: Wayeb Notes 34: University of Copenhagen: European Association of Mayanists, pp1–68]

As shown in my books, numerous ancient cultures recognized that the lunar cycle known as the lunation was dominated by nine identifiable phases to which they piously ascribed exceptional divinity (the Egyptian *Ennead* or *Paut* being the best-known example). As the only phases in the lunation identifiable on sight – opposing crescents, opposed half-moons, twin full moons, first waning phase & two successive dark nights – their reign was the dominion of the calendar.

Given the tendered translation of the recognized elements in the construct 'B'olon-Yokte' – "nine gods", arguably representing 'the completed lunation' – the possibility emerges that the anticipated 'end-time' of B'ak'tun 13 could well signal an *integral* compound lunar interval.

One b'ak'tun (20 k'atun) is equal to 144,000 days (a k'atun of 7200 days being equal to 20 tun, which each comprise 18 twenty-day uinal, or 360 days). Thus 13 b'ak'tun equal 1,872,000 days.

The verse in question, in other words, appears to purport that "a display of B'olon-Yokte' in a great investiture" will ensue every 1,872,000 days.

Parcelling 1,872,000 days into lunations (each extending 29.530588 days, as presently computed) produces a quotient of 63,391.897242 lunations (equivalent to 5125 years 133 days 17 hours 24 minutes 4 seconds).

Given the protracted difficulty in calculating the mean measure of the lunation empirically, it's not inconceivable that the culture responsible for the verse (Mayan, Olmec, Zoque or other) arrived at a computation which divides precisely into 1,872,000 days. As 63,391.897242 lunations so nearly approaches the figure 63,392, their putative 'measure of mean lunation' may be computed simply by dividing 63,392 into 1,872,000 days.

The result (29.530540 days) deviates from the modern measure of mean lunation (29.530588 days) by a mere 0.000048 days or 4.1472 seconds. In other words, this putative ancient calculation comes within four seconds of our current measure (a remarkable feat given that lunations vary in duration). The later Dresden Codex attests to Mayan interest in a measure of mean lunation (surrendering, however, the somewhat less accurate average of 29.5302 days).

In actuality 63,392 lunations consume 1,872,003.034496 days; meaning that the anticipated conjunction (or "investiture") of 'observable lunations' (or "display") with 'a round number of days' would 'converge' just under 50 minutes after midnight on 25 December 2012, granted the conventionally-accepted starting date (11 August 3114 BC). Which ironically approaches Michael Coe's initial projection of the 24th (*The Maya,* 1966, p149).

Needless to say, because of the discrepancy between ancient & actual mean measures of lunation, no convergence of 'an integral compound of lunations' with 'a round number of days' ensues. December New Moon 2012, moreover, fell on the 13th (at 8:42 GMT), not the 21st, 23rd, 24th or 25th, as the Long Count cycle had been variously interpreted.

If you accept that the Long Count projects 'an integral compound of complete lunations', this would mean that the presumed start date of the Mayan calendar must be out by 9 days, & that the 'end-time' should have been backdated accordingly from the 21st to the 12th (the day before December New Moon 2012): a provocative 'convergence' by current calendar standards (12.12.12), if their calculation weren't in fact flawed.

Had the Maya – or whoever made the calculation – ever actually witnessed one of these 13-B'ak'tun 'convergences' it would have become painfully clear that their long-held belief was terribly in error.

As prevailing archæoastronomical theories about the 'end-time' focus on the 25,920-year cycle governing the wobble of the earth's axis, it bears commenting that such Precession theorists – influenced heavily by Hertha von Dechend's thesis in *Hamlet's Mill,* 1969 – too readily overlook the far more conspicuous variability (or wobble) of the lunar cycles, in attempting to interpret ancient texts: [1] the 29.530588-day lunation; [2] the 230-lunation Course cycle; & [3] the 235-lunation Phase cycle.

NORTH AMERICAN MYTH: The Great Spirit

Lunar convergences recur throughout traditional North American cultures as well, illustrating that the basis of *their* beliefs & customs likewise originated with lunar measure (& not the persistent spiritual belief tendered today).

The Sumerian moon-god, Nanna, is conspicuously cognate with Nanabijou "the shape-shifter" (a 'deity' who, like the moon, shows a different face each night, continually altering his shape). One of four sons (representing the four lunar quarters) of the great 'spirit' of the west (where the new lunation originates, lunar cycle progressing from west to east through the month), Nanabijou is turned to stone for disclosing the location of a silver mine (the underground vault of the silver-coloured moon during its submergence between lunations). The moon, having descended into the dark sepulcher of the underworld for two nights, has secreted its 'silver' beneath the stone.

The Great Spirit, Gitche Manitou, likewise resounds the ancient Cretan-Egyptian term for "moon" ('man'); yet the abstraction of a personal 'manitou' or spirit has been shamelessly grafted onto the term by those – failing to recognize the natural aspect behind the referent – who cling in consolation to the supernatural. Ignorance is myth.

The Great Peacemaker of the celebrated Iroquois Confederacy (*Haudenosaunee*), born in the west to a virgin (like waxing crescent, delivered of the 'virgin twin' of the underworld sister goddesses), sails eastward in "a white stone boat" to fulfill his destiny of bringing peace to the warring factions (the white canoe-like waxing crescent advancing from west to east, pursuing the same path along which the lunation progresses through its cycle from first to last visible phase).

The red & white serpents (which are *representationally* interpreted today as the red & white races), are pacified by the Great Peacemaker whose bright light blinds them both after they've been subdued by a black serpent beneath the elm.

Contrary to the vaunted contention that all sacred traditions preserve ancient astronomical insights, this racial interpretation of the Peacemaker 'legend' demonstrates that present-day elders have lost all memory of the tale's potential reference to lunar cycle (whose path appropriately snakes, unlike the sun, across the sky).

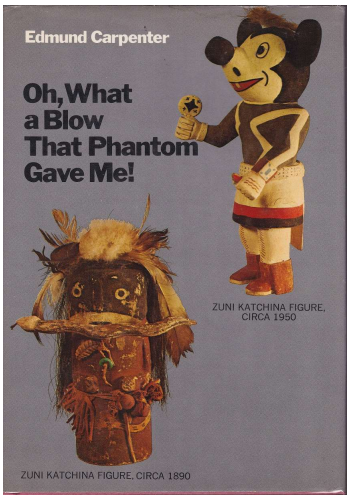
The white serpent accords with the waxing arc of the lunation (which gets brighter by the night); the red, with the waning arc (which sheds blood as the underworld serpent consumes its nightly portion of the increasingly diminishing disc); the black, with the two-night interval of darkness (when no moon appears in the sky); & the bright light of the Peacemaker, with the emergence of the redeeming new lunation (following the moon's captivity beneath the elm – in the underworld).

This interpretation supports a basis for the legend which is not only entirely devoid of 'spirit', but further accords with similar myths around the world which are additionally supported by mathematical texts substantiating their lunar premise.

It also shows that the oral tradition was no less broken & subsequently misrepresented by native American heirs to the disrupted insights, than by the acolytes of Plato's pedagogical precepts.

Redress & reconciliation for Colonial abuses are unquestionably called for, but not on the strength of presumptive 'spiritual leadership' (which 'white serpent' so sorely lacks) based on a faulty guess about the meaning of the myths. The long history of tribal conflict prior to the relatively recent formation of the Great Confederacy, ought to temper the contention that 'red serpent' (in a racial context) has any more to offer in this respect than his white counterpart.

The example of the dramatic transformation of the Zuni Kachina figure between 1890 & 1950, depicted in Edmund Carpenter's *Oh, What a Blow that Phantom Gave Me!* (1973), illustrates not only how unreliable elder authority based on oral tradition, may prove; or how quickly & unconsciously the older interpretations might be displaced; but also how easily the 'trance repository of primeval images' (equated with Jung's 'collective unconscious') may be corrupted through influence – in this case, the unrecognized influence of Walt Disney. Relatively modern Zuni elders in 1950 who believed that their Kachina figure maintained its traditional form, remained oblivious to its transformation through those 60 years into an effigy of Mickey Mouse.



Native American tribes are no less prone to their own cultural misanthropology than everyone else, as shown by these (& numerous other) examples. While the loss of Old World insights among those who cling so literally to the monotheistic scriptures, demonstrates that we're confronted with a universal breach of cultural origins, in desperate need of clarification. Origins which initially had nothing whatever to do with 'spirit' or Creator.

The 'transcendent solution' is hardly confined to chthonic or tribal cultures. Gnostic movements the past 2000 years have likewise maintained earnest rites of ecstatic revelation (in contrast to blind catechistical 'faith'), in fervent quest of illumination. Still, the mystical or spiritual paths have been revealed through the lunar interpretation of ancient scripture, to lead away from historical insight, toward a cul-de-sac of prejudicial expectation & intentionality. The ancient myths & legends were merely composed to *appear* divine, for those whose lack of numeracy would risk confounding the hard-won measures.

Which is not to say that the so-called spiritual quest is bogus, but rather (like every ideology), functions in direct proportion to the suspension of disbelief invested. Invented constructs like Kabbalah or Go consume their devotees because the closed system imposes a hermetic vocabulary of generative terms which perpetuates its expression. A circular reality. Fluency in the 'figures of rhetoric' or the 'poses of yoga' only makes the adept proficient in systemic terminology. The question of the validity of the system, with respect to its initial motivation (*ie,* coming up with a solution to the mystery of inherited myths), remains moot.

Generative reality, intentional perception, or spiritual appetite, all address the common impulse to commune, but the myths & traditions upon which elders in all cultures have compounded their spiritual focus & practice for millennia, have now been shown to relate exclusively to lunar measure. The practice of spiritual engagement may continue to present a nurturing social nexus for some, but the superstitions upon which 'transcendent communion' was mistakenly initiated are no longer historically defensible. Seeing the Virgin Mary in a mouldy crust of bread may be no less 'inspired' or convincing than experiencing cosmic transcendence through shamanic trance. Yet the ancient traditions in whose terms mystics tend to couch such experience, focused initially on something entirely other than 'divinity' or 'spirit'.

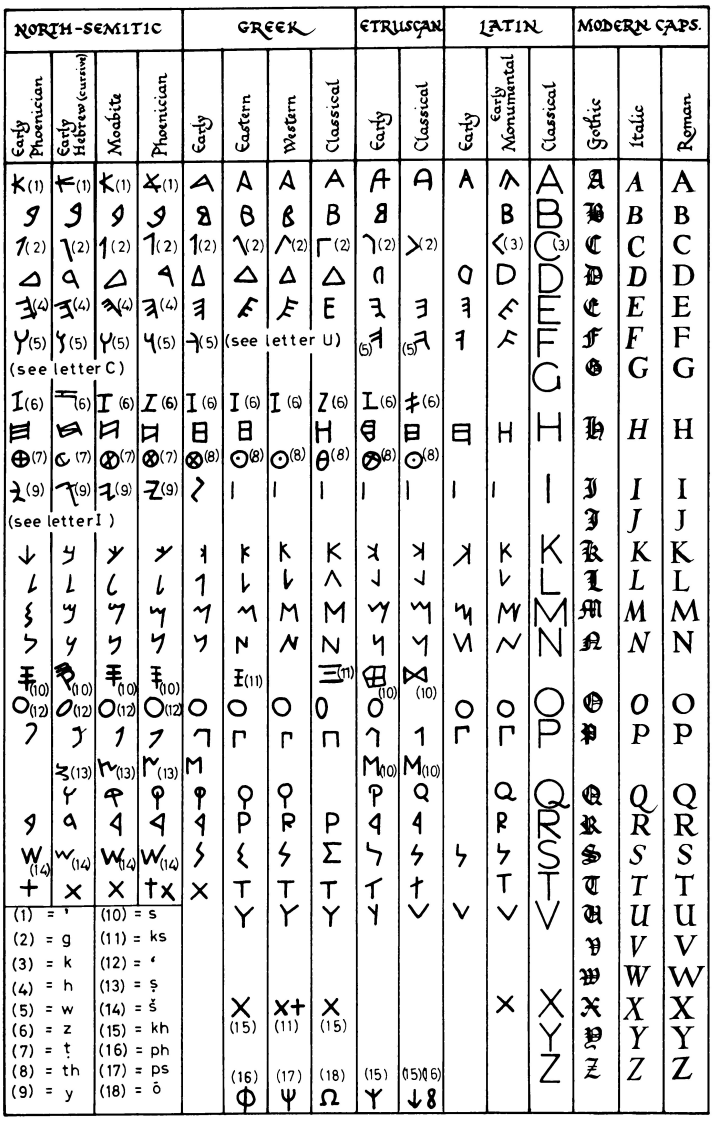
In a similar respect, the Creator may exist; but the myths & scriptures upon which his existence was presumed, addressed 'measure' not 'deity'.

The experience of psychic interconnection likewise may be either real or projected, but the ancient myths which 'so many who believe in telepathy & psychokinesis' cite in its defence, only *appear* to support psionic phenomena. It may prove more than a little ironic that the psychics have missed the possibility that the myths merely preserve measures of time.

G | SYMBOLS

SYMBOLS 1: Origin of the Alphabet

In 1995 I noticed a previously undetected association between the Alphabet & the moon which led to a thesis about its conception. Several key letters appear to have originated as symbols not only representing, but also tracing the phases of the lunation.



Conjectured Early Alphabets [Diringer, *The Alphabet* II, p373]

The third letter (C) resembles the third phase (waxing crescent); the ninth letter theta (Θ), the ninth phase (waxing half-moon); the 15th letter (O), the 15th phase (first full moon); while the first two letters incorporate single (A) & double (B) sighting vertices respectively (like scopes), with a cancel-line struck through, in accordance with the first two (dark) nights of the lunation when no moon is visible in the sky.

Second full moon (on day 16 of the cycle) is represented by a square-like character resembling a trilithon (Π, the 16th letter in the Alphabet), whose adoption in mathematics (pi) appropriately denotes the geometrical relation between the diameter & circumference of a circle. A diameter, when projected outward in the four cardinal directions (in tangent with the circumference of the circle symbolizing the full moon on day 15), which encloses the circle in a square. In other words, the figure of the related square proves a fitting symbol for differentiating the second or 'squared' full moon from the first.

The 17th letter (Q) likewise accords with the first waning phase (occurring on day 17), a full circle (like the preceding phase, full moon) trailing a tail to the right, a downstroke arguably signifying 'descent' (day 17 inaugurating the waning or descending arc of the lunation). The first night of the waning arc is accordingly identifiable by the sliver shaved appropriately from the right side of the full moon.

And the letter X (chi) represents the waning half-moon as a reflection (or mirror-image) of its waxing correlative: the oblique line of the waning half-moon inclined in opposition to that of its waxing counterpart (as they actually appear).

These focal letters display three key points of convergence with the lunation:
FORMAL the letters appear to be drawn from their corresponding phases;
ORDINAL both fall in the same places in their respective sequences; &
SPECTRAL they involve the only phases in the lunation identifiable on sight.

Such characters would obviously prove ideal in keeping track of recognizable phases over extended periods of time (by marking the appropriate letter-pictures in successive cells of a blank calendar register).

SYMBOLS 2: Lunar Cycles

Discovery of the lunar correspondences in the Alphabet led to an investigation of lunar mechanics, which revealed three highly enigmatic cycles confronting the primitive observer:

[A] **LUNATION** comprising 29.530588 days (on average)
divided into two arcs (waxing & waning) incorporating four quarters which harbour:
12 visible waxing phases (nights 3 to 14),
2 full moons (15 & 16),
13 or 14 visible waning phases (17 to 29 or 30) &
2 dark nights (1 & 2): for a total of
29 or 30 phases (27 or 28 of them visible);

[B] **COURSE CYCLE** extending 230 lunations (6792.03524 days or very nearly 18.6 years) before the moon retraces its rising & setting points on the horizon [18.6 × 365.2422 = 6793.50492];

[C] **PHASE CYCLE** consuming 235 lunations (6939.68818 days or just over two hours more than 19 years) between recurrences of the same phase (most reliably, waxing half-moon) on the same solar date – ideally, equinox [19 x 365.2422 = 6939.6018];

This led to two further insights which surrendered the keys to ancient myth & iconography:

[D] waxing crescent appears inexplicably in the western sky; while the final phase, waning crescent, disappears in the east (the lunation progressing in apparent opposition to solar & stellar mechanics);

[E] only seven visible phases (which I term ‘spectres’) & two unseen phases (or ‘a-spects’) are readily identifiable on sight (all other phases in the lunation proving empirically indistinguishable): opposing crescents; opposed half-moons; twin full moons; first waning phase; & two dark nights.

These nine identifiable phases presented ideal candidates for deification in ancient cultures (*eg,* the Egyptian *Ennead* or *Paut*) while the seven identifiable spectres accord with the sacred number seven.

SYMBOLS 3: Focal Egyptian & Hellenic Pantheons

[1]	Nephthys	first dark night	Artemis
[2]	Isis	second dark night	Demeter
(3)	Horus	waxing crescent	Ares
(9)	Thoth	waxing half-moon	Hermes
(15)	Amon	first full-moon	Apollo
(16)	Ra	second full-moon	Zeus
(17)	Set	first waning phase	Poseidon
(23)	Ptah	waning half-moon	Hephæstus
(30)	Osiris	waning crescent	Hades / Pluto (29/30).

Lunar cycle, in other words, appears to represent the long-lost model upon which ancient myth & symbol were based.

SYMBOLS 4: The Week

The prevailing theory of the origin of the week holds that the days appear to be named after the planets. Weekdays do bear the names of the seven wandering stars (*planetes*) of the late or Classical period of antiquity; but the order is wrong. An alternate theory supports the premise that the names of the planets were in fact adopted from the names of gods.

For instance, did Mercury – celestial messenger, god of script & measure (in Egypt) – lend his name to the first planet in the solar system, or take it from the name given to the planet? The terms Mercury, Hermes, Thoth *et al,* recur throughout antiquity in what appear to be celestial contexts, leaving the impression that ancient astronomer-priests had obviously intended a planetary association. Yet Mercury is notoriously difficult to detect with the naked eye…

"Mercury, the nearest planet to the sun, has [supposedly] *been known from prehistoric times, though most persons have never seen it. There is a tradition indeed that even Copernicus never did. This is due to the fact that, since its orbit is far inside that of the Earth, its angular distance from the Sun never exceeds 28°. This last occurs when the planet comes to aphelion at greater elongation; when near perihelion it would be nearly 18°. Again, as Mercury is always near the ecliptic, it will best be seen when the latter is most nearly perpendicular to the horizon. This occurs for middle northern latitudes after sunset near the spring equinox & before sunrise near the fall equinox. Even then, by the time darkness has fallen, the planet is quite near the horizon or has set. So no one can ever observe Mercury under favourable night conditions, in fact the best observations* [*ie,* today, using the telescope] *are made in full daylight when the planet is higher in the sky* [Charles Oliver, 'Mercury' in Encyclopedia Americana Volume XVIII, pp667/8]."

To add context, consider how long it took to recognize that morning-star Eosphorus, & evening-star Hesperus, were in actuality the same planet, Venus – the credit for which traditionally goes to Parmenides (*ca* 512–400 BC). Which corresponds with the classical era of astronomical enlightenment.

"The first [Babylonian] *list of stars which used the signs of the zodiac to describe their positions is dated about 410 BC. Later, the Greeks used the signs of the zodiac. As far as we know, the first Greek astronomers to use it were Meton & Euctemon, about 430 BC* [Thurston, *Early Astronomy,* p66]."

The numerous mathematical tablets which survive from Mesopotamia, date from the Old Babylonian Empire, while astronomical works appear restricted to the later Chaldean period.

"Cuneiform tablets with mathematical contents are known to us mostly from the so-called 'Old Babylonian' period, about 1600 BC. No astronomical texts of any scientific significance exist from this period, while the mathematical texts show the highest level ever attained in Babylonia. The second period from which we have a larger number of texts is the latest period of Babylonian history, when Mesopotamia had become a part of the empire of Alexander's successors, the 'Seleucids'. This period, from about 300 BC to the beginning of our era, has furnished us with a great number of astronomical texts of a most remarkable mathematical character, fully comparable to the astronomy of the Almagest [Neugebauer, *The Exact Sciences in Antiquity,* p14]."

Astronomical data from the older Egyptian remains are likewise sparse:
"In summary, from the almost three millennia of Egyptian writing, the only texts which have come down to us & deal with a numerical prediction of astronomical phenomena belong to the Hellenistic or Roman period. None of the earlier astronomical documents [*eg,* coffin texts] *contain mathematical elements; they are crude observational schemes, partly religious, partly practical in purpose. Ancient science was the product of a very few men; & these few happened not to be Egyptians* [Neugebauer, *op cit,* p91]."

All available data point to the classical age as the period of greatest ferment in ancient astronomy & celestial mechanics.

"By about 300 BC the Babylonians had developed very successful theories for the motions of the planets, Sun, & Moon. These theories were based upon arithmetic rules, rather than on the geometrical models that characterized the Greek approach. When the Greeks began to deal quantitatively with planetary theory, they were able to base their geometrical models on numerical parameters borrowed from the Babylonians. This process was well underway in the second century BC [Evans & Berggren, *Geminos: Introduction to the Phenomena,* pp14/5]."

Yet the names of the seven planets – or ancient gods who resided in the sky – arose at least two millennia earlier. Might these names refer to celestial phenomena other than planets?

It has long been known that the names of Greek days of the month were drawn from the phases of the Moon, but no one has yet ventured a similar explanation for the names of the days of the week. Naming the phases – or better yet, giving each lunar phase its own characteristic letter of the alphabet – facilitates extended measurement of the lunar cycle: the name or character entered into the appropriate square on a blank calendar leaf, preserving a continuous record of the irregularities among lunations.

"Reckoning the days [of the month] *by the Moon means for the names of the days to be in conformity with the phases of the Moon, for the names of the days were named for the phases of the Moon. Thus, on the day the Moon appears new, it* [the day] *was named, by contraction, noumenia* [new month]; *on the day it makes its second appearance they call it 'second'; & they call the phase of the Moon occurring at the middle of the month dichomenia* [dividing the month] *from this circumstance. And in general they named all the days for the phases of the Moon; thus they also called the thirtieth day of the month, which is last, triakas, from this very circumstance* [Geminos (88–36 BC) *Introduction to the Phenomena,* p177]."

Historians – not excluding the classical Greek thinkers – have long sought to interpret the ancient texts involving gods, in cosmological (planetary) terms, but rarely in express relation to lunar mechanics.

There are only seven identifiable lunar phases in each lunation. Phases surrounding these identifiable Spectres lack distinguishable features affording recognition. The seven 'gods' of the lunation include: waxing crescent (3); waxing half-moon (9); first full moon (15); second full moon (16); first waning phase (on day 17 in the cycle); waning half-moon (23); & the waning crescent (29/30) – ie, opposing crescents, opposed half-moons, twin full moons & the abominable herald of advancing decay. (The rest of the lunar Spectres are notoriously difficult to identify on sight.)

Their theophanies in the Egyptian & Greek pantheons incorporate (in order): Horus (Ares) the avenger brandishing his crescent-like sword; Thoth (Hermes) god of script & just measure; Amon (Apollo) the luminous one; Ra (Zeus) the brightest one – mistaken by scholars & historians as far back as the classical Greek age, for the Sun; Set (Poseidon) infernal god of the briny depths [*cf,* Satan]; Ptah (Hephæstus) the celestial smith; & Osiris (Hades / Pluto) embodying the crescentine phallus with which he impregnates the lunar goddess residing in the underworld (Isis / Demeter) on his demise, to beget the new lunation. Each lunation begins anew with Osiris's 'son' Horus rising to avenge the death of a father at the infernal hands of Set (precipitant of the downfall of the terminal 'god' & other waning phases, by initiating the waning arc of the cycle).

The Week, in other words, conjoined the dominant theophanies of the lunation in an 'archangelic' hierarchy (not unlike the Christian godhead fused in Trinity). And the names of most of the planets arise from this divine pantheon as well: Ares (Mars); Hermes (Mercury); Set (Saturn); & Zeus (Jupiter). Given that Venus is a late Roman deity (whose earliest known temple in Rome was consecrated in 295 BC), it remains to consider whether prior references to the evanescent goddess Venus – Ninlil mother of the moongod (in Sumeria), Isis (in Egypt), Ishtar (in Babylonia), Astarte (in Phœnicia) & Demeter or Aphrodite (in Greece) – might not in fact invoke the lunar goddess in her Aspect as regeneratrix of the sacred cycle. Nannar the moongod, for instance, embodied the complete Spectral cycle. While Ningal, wife of Nannar, conceived the successive Spectres of the lunation each daytime when the moon descends into the underworld realm of the goddess. Ninlil (mother of Nannar) gave birth to the lunation; Ningal (wife of Nannar), to the individual phases.

In later pantheons, a distinct Aspect of the goddess couples with each of the seven focal Spectres (the Seven Sisters, lunar long before their stellar transposition – scholars insisting ancient allusions to the seven daughters of Atlas, or Seven Hathors of Egypt, refer to the Pleiades – which are disproportionately dim).

The triple-goddess elaborates another refinement of the role of the mate of the moongod: Goddess of Abundance, emergent Maiden, begetting the waxing arc of the cycle (her progeny increasingly full); the Goddess of Decrease, declining Hag, the waning arc (a progressively lean litter); & the Goddess of Renewal, paradigm of the Mother, the new lunation.

The goddess is never seen; she remains in the underworld (the white, or lunar, goddess thereby synonymous with the earth-mother goddess in various cultures). The moongod alone is visible. Yet two nights each lunation, he too subsides into the underworld lair of the goddess – the two nights between crescents, without a moon in the sky – a dark interval which provides the key to unlocking the mysteries of ancient myth. This is also the reason the underworld was considered the realm of the goddess: the moon confined there two nights, or half-days, longer than the sun each month.

Our weekday names, as is well known, derive in part from the Scandinavian Germanic correlatives of the gods – Tyw / Tyr, Woten / Odin, Thor & Freyr (twin of Freyja) – with the retention of Saturn, Sun & Moon days; the Romance derivations preserving the putative 'planetary' origins more cogently: Solis, Luna, Martis, Mercurii, Iovis, Veneris & Saturni (Latin).

Ancient astronomer-priests also conceived a hierarchy of 'terrestrial or subterranean planets' to complement the celestial luminaries: (1) lead – Saturn; (2) tin – Jupiter; (3) iron – Mars; (4) copper – Venus; (5) mercury – Mercury; (6) silver – Moon; (7) gold – Sun. Imposing this arcanum on the week (employing the French names) exhumes a metallic mnemonic of ordinals digressing in threes, with inferior & superior elements at the end of the week juxtaposed to produce a doubled interval (of 6).

Which memorializes the crucial observance of a prolonged count on the seventh day – on the seventh day rest, or count it again: (6) silver – lundi; (3) iron – mardi; (5) mercury – mercredi; (2) tin – jeudi;

(4) copper – vendredi; (1) lead – samedi; (7) gold – dimanche (Latin *dominica* – a doubled [do / di] measure [minica / manche incorporating a prefix whose root is men / man = “moon”]; *cf, dicho-menia* – ‘dividing the month’). An emphatically cyclical mnemonic, in which the sixth element succeeds the seventh. And an ordinal digression (6–3–5–2–4–1–7) which illuminates the succession in the ‘planetary’ week.

The need to rest on the seventh day arises from the rounded length of a lunation (29.5 days) – the theophany of the final phase in the 29-day month (Hades) demanding a distinct entity as its counterpart for the 30-day month (Pluto, meaning ‘wealthy’ – by an extra day).

This lunar hierarchy comprises the basis of all ancient scripture & iconography. The moon with its elusive complexities – the broad variabilities in lunation length, together with the protracted measures of the course & phase cycles – subjecting ancient man to its reverent observance for countless millennia before he finally divined the nature of his most sacred divinity (the one who watched over him while he was most vulnerable, during sleep). Faithful observance which rewarded him with the incalculable benefits the god was inclined to bestow; first & foremost: measure.

The moongod, he was convinced, was trying to ‘tell’ him something by exposing a different face each night, but what? Once ancient man recognized the language his god was speaking – the language of measure – his command of his condition grew divine. And I contend the first glimmer of recognition occurred with the discovery of the relation of diameter to circumference of an idealized half-moon: a length of rope going around a circle of pegs in which it doubled as diameter, three-&-a-little times.

Seven focal Spectres delimit the visible portion of the lunation from waxing crescent to waning crescent, just as the series of integers from 1 to 7 incorporates the greatest number of visible phases in a lunation: 1 + 2 + 3 + 4 + 5 + 6 + 7 = 28. A presentiment of divine affirmation – emphasized in the triangular perfection of the number twenty-eight, whose factors protract the whole: 1⁄2 of 28 = 14; 1⁄4 = 7; 1⁄7 = 4; 1⁄14 = 2; 1⁄28 = 1: 14 + 7 + 4 + 2 + 1 = 28.

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